

INSIDE DOPE

Learn to live and laugh—
Thus delay your epitaph

By GEORGE
F. TAUBENECK

Stories of the Week
Verse of the Week
This Is Business?
Predictions of Things
To Come
Out of Our Mailbag
Last Thoughts
Last Laughs

Stories of the Week

Maizie quit her job as the "maid" in a wealthy home.

"I don't understand," protested her mistress. "We have treated you like a member of the family, haven't we?"

"That's why I'm leaving. I can't stand the bickering, and I want to be treated like a human being."

Blushing bride was self-conscious in the hotel lobby.

"Let's try to make people think we've been married a long time," she whispered.

"Okay. You carry our luggage."

"Father," commanded Mrs. Tex Billionnaire, "get out one of the Cadillacs.

"The children want to play outdoors, so you'll have to drive them to our back yard."

Verse of the Week

At twenty, stooping round about,
I thought the world a miserable place,

Truth a trick, faith in doubt,
Little beauty, less grace.
Now at sixty what I see,
Although the world is worse by far,
Stops my heart in ecstasy.
God, the wonders that there are!

This Is Business?

"Here's what economics means," pontificated Reggie. "Look at this suit I'm wearing. Wool was supplied by Australia. Scotsmen wove the fabric, tailoring done in Rochester, N. Y., and I bought it from a retailer in Chicago. You see:

"At least a dozen people are making money from a suit I haven't paid for yet."

Predictions of Things To Come

Many years ago, as a fledgling sports writer, "Dope" worked for Rudy Lotz. The latter presently is a safe-and-sane financial expert for Virginia Smelting Co.

Now and then Virginia Smelting's dignified Rollin Israel leaves their West Norfolk, Va. home base on a selling trip. Whereupon Rudy reverts to type, and issues a bucolically humorous letter. For our money, brother Lotz is funnier than Kin Hubbard or Herb Shriner. We quote from a recent epistle, which PREDICTS coming events:

"SPORTS—Rocky will successfully defend his title, the Yankees will win the American League pennant, Willie Mays won't get as many hits, attendance will be down, minor leagues will have tougher sledding, tennis fans will still get stiff necks, 165,769 golfers will take lessons to try to cure
(Concluded on Page 9, Col. 1)

ASHAE Meeting Set for June 27 In San Francisco

SAN FRANCISCO—Eleven technical papers and a symposium on evaporative cooling will be presented when the American Society of Heating and Air-Conditioning Engineers holds its semiannual meeting at the St. Francis hotel here June 27 to 29.

Numerous entertainment features have been scheduled to augment the technical program.

Considerable variety of topics will be aired in the three technical sessions, including air conditioning coil odors, room air distribution systems, design of forced draft cooling towers, and others.

Eight speakers will participate in the evaporative cooling symposium, covering such aspects as geographical limitations, system design, water treatment, evaporation
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Augenstein To Head G-E Room Unit Dept.

LOUISVILLE, Ky. — P. M. Augenstein has been appointed general manager of the Room Air Conditioner Dept. in General Electric Co.'s Major Appliance Div., C. K. Rieger, vice president and division general manager, announced recently.

Augenstein succeeds H. B. Miller, who has been named general manager of the Home Laundry Dept. Miller succeeds J. H. Goss, recently elected president of Canadian General Electric Co.

Augenstein, who was marketing manager for room air conditioners, is succeeded in that post by T. D. Eberhardt, formerly sales manager for the department.

In accordance with the decen-
(Concluded on Back Page, Col. 3)

Perfection Announces Hupp Merger Plans

CLEVELAND — Perfection Industries, Inc., announces that plans are under way to merge its operations with those of the Hupp Corp. Hupp, on June 11 announced the purchase of 65,000 shares of Perfection's common stock. Another 45,000 shares were acquired by Hupp associates in New York—John O. Ekblom & Co. and David J. Greene & Co.

According to John O. Ekblom, chairman of the executive committee of the Hupp Corp., the 110,000 shares represents approximately
(Concluded on Back Page, Col. 5)

'Totally Different' Appliances of the Future Aimed at Cutting Food Preparation Time

MANSFIELD, Ohio — Vast changes in electric home appliances, and the introduction of several completely new appliances that are totally different from anything we have today, are future prospects for the American housewife, according to E. K. Clark, engineering manager for Westinghouse appliances here.

In a recent statement, Clark forewarned the homemakers of America that "it will be many

Is Transshipping a 'Healthy Form of Price Competition?'

WASHINGTON, D. C. — Discussing "bootlegging" of automobiles before a Senate Judiciary Subcommittee, Stanley N. Barnes, head of the Anti-Trust Div. of the Justice Dept., said this practice may represent "a healthy form of price competition."

Bootlegging of cars is similar to transshipping of appliances. It refers to the sale of brand-name merchandise by a franchised dealer to an unauthorized dealer for resale at cut prices.

The National Automobile Dealers Association has branded the practice as a serious competitive evil. Barnes acknowledged that bootlegging might harm some authorized dealers but he said he "could not see how it could harm the consumer."

"In fact," Barnes told the sub-
(Concluded on Back Page, Col. 4)

Room Unit Sales Jump 31%; Inventories Drop 40%

DETROIT — Statistics on sales and inventories of room air conditioners in 1955 could mean the industry is heading for a record year.

According to the Air-Conditioning & Refrigeration Institute, room unit sales for the first five months of this year were up 31% compared with the same period of 1954. And factory and distributor inventories were down 40% and 28%, respectively.

Earlier, the ARI announced that reports to it indicated retail sales of room air conditioners for the first quarter of 1955 rose nearly 30% from the like year-ago
(Concluded on Page 4, Col. 4)

Washer-Dryer, Automatic Washer Plan Merger

CHICAGO — Directors of Automatic Washer Co. of Newton, Iowa meeting here voted unanimously to acquire the assets of the Washer-Dryer Corp. of Skokie, Ill., owners of household washer patents and producer of commercial washer-dryers.

Charles E. King, Automatic's board chairman, said that if stockholders approve, Automatic will acquire a license under all of Bendix home appliance patents, present and future, together with additional manufacturing rights and tooling for a new low cost combination washer-dryer recently announced by the company.

The new unit will be unveiled at
(Concluded on Page 29, Col. 3)

ASRE To Meet In Atlantic City Dec. 1-3 After All-Industry Show

MILWAUKEE — Selection of Dec. 1 to 3 and Atlantic City, N. J. for its next meeting was finally decided by the American Society of Refrigerating Engineers during its 42nd semiannual meeting here last week, June 12 to 15.

The winter session, to be held

at the Traymore hotel, will come on the heels of the All-Industry Show. ASRE meetings will start on Thursday, Dec. 1, the last day of the exposition, and run through Saturday.

Last week's meeting was a lively one with a number of controversial topics being aired at technical sessions, conferences, and forums.

Considerable discussion, for example, was evoked in a forum on "Designation of Refrigerants" con-

Significant Conclusions From Austin Village Study

MILWAUKEE—Final report on the NAHB Air Conditioned Village at Austin, Texas is still months away, but several significant conclusions already reached were presented at the Air Conditioning Conference during the 42nd semiannual meeting of the American Society of Refrigerating Engineers here last week.

Some of the highlights:

Housewives save 22 hours a month on cleaning; families eat better; heat rash in infants is completely eliminated; colds and other nasal problems definitely reduced; operating costs are low (in the \$100-a-year bracket for half the 22 houses); comfort is a combination of (1) constant air movement, (2) even humidity between 40% and 60% r.h., (3) temperature between 75° and 78° F., according to Ned A. Cole of Austin.

Actual shipments of residential air conditioners in 1954 by 19
(Concluded on Back Page, Col. 2)

NEMA Freezer Sales Total 58,473 for Month of April

NEW YORK CITY—A total of 58,473 home freezers were sold during April by 22 producers reporting to the National Electrical Manufacturers Association.

Figures released by Nema indicate that this is 9% under sales for April, 1954 and 8% under March. For the first four months of the year, however, sales are 11% higher than in the 1954 period. They total 239,776 units.

Although April sales in the United States were down 12% from last year and 10% from March, export sales were booming.

Sales to Canada were 73% higher than in April, 1954 and higher than any month since May, 1953. Sales to other foreign countries were ahead of any previous month in years. They were 86% higher than last year and 31% higher than March. Total export sales, however, amounted to less than 3,000 freezers for the month.

Carrier Sets Up New Central Planning Division

SYRACUSE, N. Y.—Formation of a central planning division in Carrier Corp. is announced by Cloud Wampler, chairman and president.

The new division will include the present planning staff and will be headed by John H. Holton who has been a vice president of the corporation since 1942.

Holton will be succeeded as vice president and general manager of the Unitary Equipment Div. by Russell Gray, vice president, who was assistant general manager of that division. Gray has been with Carrier for 22 years in various sales, engineering, and management capacities.

The Planning Div. will coordinate all divisional and major departmental plans and will also en-
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WHY WAIT HOURS?

When you have "freeze-ups" (or other moisture troubles) why not stop them right away? Why wait for the moisture to be picked up?

Thawzone goes right to the moisture. No delay. It travels through the refrigerating unit right away. You get action quickly, wherever the moisture may be.

Remember, the drier that destroys moisture is Thawzone. The water can't come back. And no clogging with oil or pressure drop with Thawzone. Costs only about 8¢ per lb. of refrigerant treated.

For all "Freon" or methyl units. See your wholesaler or write

Highside Chemicals Co., 18 Colfax Ave., Clifton, N. J.



THAWZONE
THE LIQUID DRIER

ONE MAN can walk an Air Conditioner UPSTAIRS ALONE and put it in the window without help with the new L-S STAIRWALKING "HYKER"

write

L-S HTG. & ENGRG. CO.
910 W. Lycoming St.
Philadelphia 40, Pa.
Territories Available

Newspaper Adv. of Home Air Conditioning Up 78.5% In '54; Spend \$2,329,000

NEW YORK CITY—Home air conditioning advertising placed in newspapers increased 78.5% in 1954 over 1953, the Bureau of Advertising for the American Newspapers Publishers Association announced recently.

The percentage increase was the second largest scored by any of the 50 sub-classifications reported by Media Records, the bureau said.

Air conditioning manufacturers spent \$2,329,000 on newspaper advertising, while manufacturers of home refrigeration equipment spent \$2,704,000 in this field.

Accounting for the major share of the increase were Fedders-Quigan Corp. with a \$266,899 investment, up 50.2% over 1953 (\$177,698); Philco Corp.'s \$241,402, up 246% (\$69,666); G-E's \$188,028, up 231.1% (\$60,056); Carrier Corp.'s \$1,69,363, up 37% (\$123,603); RCA's \$119,545, (no expenditure in 1953); Westinghouse Electric Corp.'s \$118,637, up 5,752.8% (\$2,027); and O. A. Sutton Corp.'s \$111,908, up 140% (\$46,632).

In a 110-city survey of advertising lineage trends for the first quarter of 1955, Media Records found that home air conditioning advertising was up 78.8% over the same quarter last year.

Price Boosts In Steel To Be Reflected In Home Heating

BOSTON—Any price boosts in steel resulting from current wage negotiations will be reflected in higher prices for home heating equipment, manufacturers gathered at the Eastern Oil Heat show here indicated recently.

They indicated that they have been absorbing cost increases over the past few years and are not able to do so any more.

They report, however, that sales volume this year has been substantially ahead of previous years. Some believe that 1955 will be the best year in their history.

Servel Appoints W. R. Dwyer Air Conditioning Manager For 14 Eastern States

EVANSVILLE, Ind.—Walter R. Dwyer has been appointed eastern regional air conditioning manager for Servel, Inc., according to H. R. Nielsen, manager of Servel's air conditioning division.

Dwyer, formerly zone sales manager in the Pittsburgh area, will now be in charge of air conditioning sales and service in 14 eastern states, with headquarters in New York. He succeeds Nils D. Sellman, who resigned.

Dwyer was educated at Rensselaer Polytechnic Institute.

Rise & Shine!

Florida Utility Promotion Aimed at \$2 Million Sale Of Home Air Conditioning

MIAMI, Fla.—A "Rise & Shine" promotion aimed at selling more than \$2 million worth of home air conditioning and ventilating equipment during June, July, and August has been launched by the Florida Power & Light Co. here.

"Big problem this year," the company said, "will be to raise the air conditioner out of the luxury class to show that the necessity of air conditioning is as much a part of the home as a refrigerator. This is the first step in creating the desire."

Goal of the campaign is the sale of 5,000 air conditioners at an estimated value of \$1,750,000. More than half of them are expected to be sold in the Miami area. Dealers will also aim at selling 2,000 ventilating fans and 10,000 portable fans.

The utility declared that it would back up the Rise and Shine campaign with a barrage of advertising and sales promotional aids to a greater extent than ever.

The utility is offering to dealers free window display materials, etc. It also is offering them floor and window display space in its offices.

Typhoon Names Stone To Direct Adv., Promotion

BROOKLYN—S. Byron Stone has been appointed advertising and sales promotion director of



S. B. Stone

Typhoon Air Conditioning Co., Inc., it was announced by Mark E. Mooney, vice president in charge of sales.

A veteran of 15 years in the advertising field, Stone served as an advertising and sales promotion manager, agency account executive, copy chief, and creative art director. At various times, he has directed advertising and promotion for industrial machinery, audio products, electronic computers, lawn mowers, and welding alloys.

He was responsible for the organization and direction of the public relations program publicizing the International Machine Tool Exhibition, held in 1953 in Olympia-London for the British Industries Corp. Stone also organized, designed, and handled the contracting for the New York Civil Defense Exposition during 1952-53.

Stone attended the City College of New York, graduating with a B.A. degree.

Chambers Announces Electric Range Built-In Line

NEW YORK CITY—The much-publicized "flight to the suburbs" has prompted a manufacturer of gas cooking equipment to enter the electric cooking market.

Chambers of Indianapolis introduced its new line of electric built-in ranges at a recent press showing here.

Population shifts to suburban areas not presently served by gas mains was a major factor in the move, according to A. H. Scheffer, sales manager of the 45-year-old firm.

A desire to provide home builders with a choice of fuel among

Chambers built-ins was an immediate consideration, Scheffer said. He noted that in built-ins, Chambers has reported substantial sales increases during the past several years.

At the press showing, the firm unveiled new electric "In-a-Wall" oven and "Liftop" surface cooking units. The two built-in styles previously have had wide acceptance in the gas appliance field.

Scheduled for marketing this fall, the electric built-ins will have the same exterior dimensions as their Chambers counterparts in gas.

They Won't Be Home

The companies listed below have notified the NEWS that their plants and/or offices will shut down for vacations during the periods shown in the center columns.

The right hand column indicates whether the plant will continue regular shipments during the shutdown period, emergency shipments only, or will make no shipments at all. When orders must be directed to a special address, this information is given immediately below the company listing. When offices will operate with a skeleton staff during plant shutdowns, that fact is noted in the third column.

This list applies to vacation shutdowns beginning

Prior to July 15

Plants with later vacation periods will be listed in coming issues of the NEWS. As the names below will not be repeated, we suggest you CLIP and SAVE this list for future reference.

Company	Shutdown Plant	Period Office	Shipments from Plant
Amana Refrigeration, Inc.	7/2 -7/16	Half Staff	Emergency
American Gas Machine Co.	7/4 -7/10	None	Regular
Bal-Air, Inc.	7/4 -7/11	None	Emergency
Bally Case & Cooler Co.	7/2 -7/10	Skeleton	Emergency
Brundage Co.	6/27-7/10	7/4 -7/10	Regular
Carbonic Dispenser, Inc.	7/11-7/17	7/11-7/17	Regular
Circle-Air Industries, Inc.	7/1 -8/1	None	Regular
Essex Wire Corp., R-B-M Div.	6/30-7/18	6/30-7/18	None
Foster Refrigerator Corp.	7/4 -7/8	7/4 -7/8	Regular
Howard Industries, Inc.	7/2 -7/10	Skeleton	Emergency
Howard Refrigerator Co., Inc.	7/4 -7/10	None	Regular
Jewett Refrigerator Co., Inc.	7/2 -7/17	7/2 -7/17	None
Jordon Refrigerator Co.	6/27-7/10	Various	Regular
Kold-Hold Div., Tranter Mfg., Inc. ...	7/1 -7/15	Skeleton	Regular
Lennox Furnace Co.	7/2 -7/18	Skeleton	Emergency
McIntire Co.	6/25-7/4	None	Emergency
Mueller Climatrol	7/3 -7/9	None	Regular
C. A. Olsen Mfg. Co.	6/17-7/5	None	Regular
Penn Controls, Inc.	6/30-7/18	None	Emergency
Spencer Thermostat Div., Metals & Controls Corp.	7/2 -7/17	None	Emergency 2nd week only
Sub-Zero Freezer Co., Inc.	7/1 -7/11	None	Regular
Wagner Electric Corp.	6/27-7/10	6/27-7/10	Regular
York-Shipley, Inc.	7/1 -7/10	7/1 -7/10	Regular

JUST MY EXTRA PROFITS ON G-E HOME COOLING BUSINESS PAID FOR MY NEW CAR ... AND MY HEATING SALES ARE UP TOO SINCE I SWITCHED TO G-E

Good things happen when you "sign up" with G.E.

New '55 models don't grow on trees. And simply by "signing up" with G.E. doesn't mean you will find heating and cooling prospects breaking down doors to place an order.

On the other hand, you'll find that the good things in life come a lot faster and easier... when you have that G-E monogram over the door of your shop.

The advantage is yours... because folks everywhere have confidence in G.E. You sell a full line—a line designed to meet every home heating and

cooling need! As if that weren't enough, there's a famous warranty that gives you and your customers more protection than anything you've seen yet—5 years on the sealed-in system of the cooling unit, for example.

If we've whetted your appetite... if you want to find out how you can get in on the fast-moving G-E picture... just send the coupon below. Learn about the great G-E line and the new G-E "Charlie Boggs" Profit Plan. Obligation? None at all. Except the one to yourself, and to your future.

HOME HEATING & COOLING DEPT.

Progress Is Our Most Important Product

GENERAL ELECTRIC

General Electric Co.—Home Heating & Cooling Dept. AC-65
Bloomfield, N. J.

Yes, I want the facts on why "signing up" with G. E. will step up my sales and progress.

Name _____

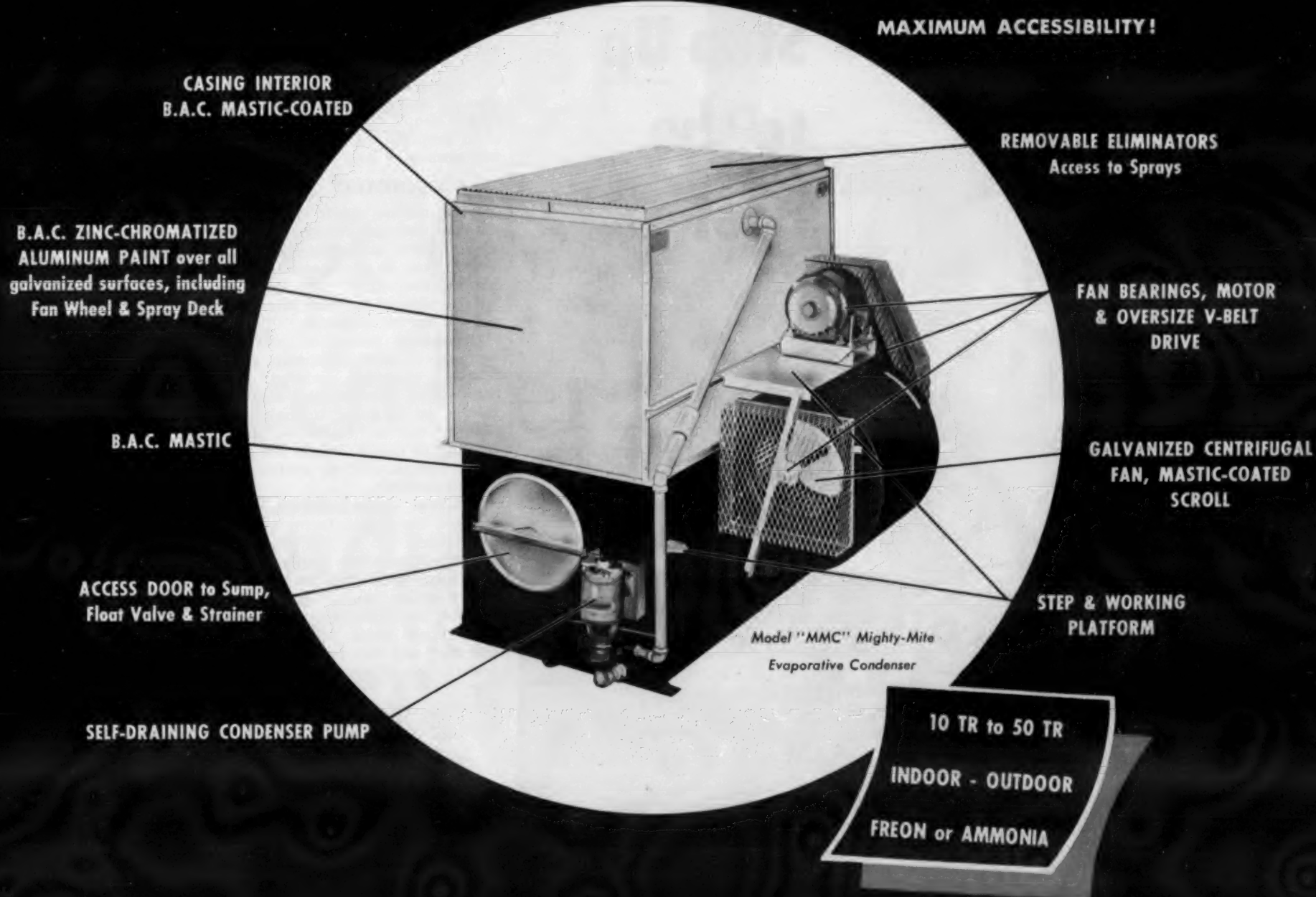
Type of Business _____

Address _____

City _____ County _____ State _____

Low Cost—High Quality!

'MMC' EVAPORATIVE CONDENSERS 'MMT' COOLING TOWERS



Write for Details

BALTIMORE AIRCOIL COMPANY, INC.

2625 MATHEWS STREET • BALTIMORE 18, MARYLAND

Other Models — Evaporative Condensers - 10 TR to 300 TR / Cooling Towers - 10 TR to 240 TR . . . in single, factory-assembled units!

Appliances of the Future--

(Concluded from Page 1, Col. 3)

frozen foods, a likely appliance might be a combination unit that stores frozen pre-cooked foods and, at the touch of a button, sends a package of frozen food into a thawing and heating chamber—thereby delivering the food ready for serving at the table in a matter of minutes and with no more effort than the push of a button.

"The package in which the food is frozen and defrosted could be of a type that would be attractive enough to place on the table, eliminating the need for a separate cooking utensil and serving dish."

In analyzing other trends in American kitchens, Clark stated that "built-in appliances will increase in number and scope. For example, the built-in refrigerators which we already have today may be better equipped to serve more purposes—such as crisping crackers and potato chips, or provide a place for drying and storing kitchen linens.

"These units will also open front and back for greater utility and shelf accessibility.

"Color will be extended even further and more radically," he predicted, "but with the trend toward more built-in appliances, it will probably develop that color in the kitchen will be provided by the individual owners rather than appliance manufacturers.

"In built-in appliances, more of the appliance body areas are concealed, and thereby the areas which must be blended in the kitchen decor are reduced to a minimum—leaving the choice of color more entirely to the individual homemaker. Manufacturers would provide color only on control panels or escutcheon plates."

In the field of food cooking, Clark envisioned "more special purpose cooking units." Instead of having a series of heating elements in a range or built-in unit, as we do today, it may develop that the food cooking or preparation area may consist of a counter with a series of heavy-duty electrical load centers in a backsplash to which the individual cooking units are plugged in.

These cooking units will provide more exact control over the proper temperature for frying, boiling, grilling, broiling, or defrosting every imaginable delicacy for the table, Clark stated. A built-in roaster well will provide waist high roasting and baking, with convenient accessories that will provide for grilling and rotary broiling, he added.

"The full area beneath this food preparation center will be especially arranged for convenient storage of these cooking appliances, thus providing additional general work space in the kitchen," Clark said.



J. H. Holton



Russell Gray

New Carrier Div.--

(Concluded from Page 1, Col. 5)

gave in long-term planning for the corporation as a whole.

According to Wampler, the new division is being formed at this time largely because of the decentralization that resulted from the acquisition earlier this year of the former Affiliated Gas Equipment, Inc.

Holton is a graduate of the Massachusetts Institute of Technology. Since 1930 he has had broad experience with Carrier including management positions in the fields of research, procurement, quality control, and manufacturing.

For the past two years he has been vice president and general manager of the Unitary Equipment Div. During World War II he headed Carrier's production effort which won for the corporation the Army-Navy "E" flag with six stars.

Room Unit Sales Soar, Inventories Drop--

(Concluded from Page 1, Col. 3) period while inventories at the wholesale and factory levels dropped nearly 12%.

"This indicates a rapid liquidation of last year's carry-over and presages another big year in the room air conditioner industry, particularly if the weather is favorable," the institute observed.

That last phrase is, of course, the big thing. Confidently expecting another boom year, manufacturers last year increased production considerably. But, alas, hot weather—the sizzling variety needed to produce volume sales—was generally late in arriving and didn't last long enough when and where it did appear. Result: heavy inventories.

POSSIBLE SHORTAGE?

Production shutdowns and cutbacks plus bargain offers by dealers have reduced the carry-over of 1954 models substantially. In fact, some claimed awhile back that there were less units on hand than there were at the beginning of last season. And at least two industry executives foresaw a possible shortage this year.

Last year's setback caused manufacturers to be a little less optimistic, generally speaking, in their estimates of 1955 sales. One official figured sales will reach the 1,100,000 mark this year. Another predicted 1,200,000 units will be sold. These estimates compare with forecasts for 1954 ranging generally from 1,300,000 to 1,500,000, with some seeing sales going as high as 2,000,000.

Whether sales this year come up to expectations depends mainly, as always, on the weather. The main reason people buy air conditioners is to keep cool. And perhaps that will always be so.

PLUG HEALTH ANGLE

But some are convinced it would pay the industry to stress other advantages of air conditioning. The health story is one that has great possibilities, they say—particularly in view of so much talk these days about air pollution.

Discussing promotion and advertising of air conditioning, a top industry executive declared: "It's nice to be comfortable. But the thing that is going to make this industry big is health—air conditioning for health. People are more concerned about their health than their comfort."

A few manufacturers have plugged the health factor in their advertising. It is felt, however, that this theme has been generally neglected by the industry.

The public should also be told how air conditioning cuts cleaning and repair costs by minimizing the dust and dirt problem; how it lowers the expense of redecorating; how it prevents shrinking, cracking, and drying out of furniture.

PLAY DOWN PRICE

And then there's a widely-used theme that, in the opinion of some, needs less emphasis. That's price.

Incidentally, some believe price emphasis is actually speeding the departure from the industry of the numerous small outfits that rushed into the air conditioning field. For some time now, the industry has speculated as to when this wash-out will take place. It's the opinion of one executive that this is the year.

Which leads to the problem of price-cutting. One industry official noted recently that this practice is continuing in spite of low inventories.

Price-cutting has become so bad, it is said, that a New York dealer group organized an Air Conditioning Sales & Service Dealer Organization. This group says air conditioners are marketed at only \$10 to \$15 above wholesale prices, even when units are in short supply, at a gross of only 3% of sales.

Another problem is that many dealers still are not sold on the air conditioner as a major appliance. Their stocks worry them as they wait anxiously for a hot spell to move in. If the weather remains on the cool side, they resort to price-cutting to sell merchandise. If a heat wave finally does arrive, they can be cleaned out of units in a couple of weeks or less. Then they're double losers—from cutting prices early in the season and, later, from being out of units.

Too, you hear grumblings about "indiscriminate" selection of dealers. Some complain that this is a cause of price-cutting, slim profits, and poor installation and service.

OFF SEASON SELLING

Encouraging dealers to stock up during the slow months is seen as one way to help overcome some of the industry's problems and lengthen the short selling season. Several producers give discounts to dealers who accept early delivery. Then the dealer can offer a discount to customers who buy in the spring.

However, one marketing expert opines: "Although pre-season discounts will help spread the selling season somewhat, the effectiveness of a price incentive alone on a commodity marketed more as a luxury than a necessity is limited."

Well, the industry has its problems, all right. But, as the News has said many times, it's an industry with a brilliant future. We are confident these and other problems will be solved or minimized as this young industry matures.

Kelvinator Sales Show Steady Increase over '54

DETROIT — Kelvinator sales, spurred by strong automatic washer and refrigerator activity, are continuing to show steadily increasing gains over comparable 1954 figures, Walter Jeffrey, vice president in charge of sales, announced.

"For the 1954-55 fiscal year, total Kelvinator appliance billings to dealers through May 31 are 25% ahead of the first eight months of fiscal 1954," Jeffrey said. "For the month of May alone, total billings are 40% greater than the same month a year ago."

Setting the pace for May were automatic washers up 67% and refrigerators up 55%, Jeffrey said.

"A most significant factor in the steady sales climb has been the response to the 'Foodarama,' possibly the most successful food keeping appliance of its type and position in the product line in Kelvinator history," he declared.

"A top of the line upright freezer and refrigerator combination, the Foodarama is now running second in total 1955 Kelvinator refrigerator sales, surpassed only by an 11-cu. ft. model in the traditionally high volume medium price bracket. During May, the Foodarama accounted for 18% of refrigerator billings."

Airtemp Names 2 New Detroit Distributors

DETROIT—Appointment of Star Steel Supply Co. and The Burton Co. as distributors for Chrysler Airtemp products in the Detroit area has been announced.

The two firms will handle Airtemp's entire line of packaged air conditioners, residential air conditioners, and gas and oil furnaces. Distribution activities will cover Wayne, Macomb, Oakland, Washenaw, and Genesee counties.

M. P. Veith, who heads the Detroit sales division for Chrysler Airtemp, said the franchising of Star Steel Supply and Burton "will give us more intensified Motor City representation."

Step Up to the Best

Step Up to

genetron® Super-Dry REFRIGERANTS

When you step up to a counter with the bright green "Genetron" counter mat on it, you know you've stepped up to the best refrigerants money can buy. You know you're dealing with a progressive wholesaler who looked over the field and chose "Genetron" Super-Dry Refrigerants as the brand to offer you. No wonder! In "Genetrons," you will be getting dependable refrigerants that are:

- Super-Dry: guaranteed exceptionally low moisture content.
- Non-corrosive to standard equipment materials.

- Non-toxic, non-flammable, stable, safe.
- Critical and freezing points are well outside range of operating uses.
- Solvent action on oil helps prevent solidification or congealing of lubricant.
- Miscible with oil; aid in lubrication of equipment.

Order today—from the man with the bright green "Genetron" mat on the counter!

genetron® 12—WHITE LABEL
DICHLORODIFLUOROMETHANE

genetron 141—GREEN LABEL
MONOCHLORODIFLUOROMETHANE

genetron 11—ORANGE LABEL
TRICHLOROMONOFUOROMETHANE

"Genetron" Super-Dry Refrigerants are Products of
GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.



Carl Brooks To Head RISAC; New Officers Named

WASHINGTON, D. C.—Carl F. Brooks, code representative of Frigidaire Div. of General Motors Corp., has been elected chairman of the Refrigeration Industry Safety Advisory Committee (RISAC).

Other officers elected by the group are: Vice chairman, R. L. Williams, Kinetic Chemicals, and treasurer, George S. Jones, Jr., managing director, Air-Conditioning & Refrigeration Institute.

RISAC is made up of representatives from the ARI, National Electrical Manufacturers Association, and Compressed Gas Association, Inc.

Brooks has been associated with Frigidaire since 1928 when he joined the Service Technical Div. to handle such assignments as field erection of marine equipment and customer relations. From 1941 to 1948 he was field service manager of G-M's Aeroproducts Div.

He is a member of the ASA Interpretations subcommittee which is charged with the duty of interpreting the provisions of American Standard Safety Code for Mechanical Refrigeration. Brooks is also a member of the International Association of Electrical Inspectors and was formerly executive secretary of the Joint Refrigeration Industry Committee, RISAC's predecessor.

Since its organization in 1948, RISAC has been successful in having the American Standard Safety Code adopted by over 1,300 states and cities.

Cory Acquires 3-Story Factory for Servicing At Main Plant Site

CHICAGO—A modern three-story brick factory building has been acquired by Cory Corp. according to President J. W. Alsdorf.

The 32,000-sq. ft. structure at 2010 S. Marshall Blvd. in Chicago is immediately adjacent to Cory's main appliance Plant #1.

"To provide better and more efficient factory service to Cory, Nicro, and Fresh'nd-Aire distributors, dealers, and retail customers, the Cory Service Dept. will take over 2½ floors of this building," Alsdorf stated.

This new plant facility has its own rail siding and truck docks. Approximately 6,000 to 8,000 sq. ft. of space will be used for warehouse storage.

According to Cory Service Manager George Sedlack, all Cory, Fresh'nd-Aire, and Nicro service will be administered in the new building.

Complete factory manufacturing and test facilities will be established so that the service operation becomes a "complete, efficient, and self-contained operation," it was stated.

Servel Names Smith as Director of Purchasing

EVANSVILLE, Ind.—Walter A. Smith has been appointed director of purchasing for Servel, Inc., according to John H. Wall, vice president and general manager of the home appliance division.

He succeeds S. L. Nicholson, who has resigned to go into business as a manufacturer's agent.

Smith has been assistant purchasing agent of Seeger Refrigerator Co. here for the past two years. Previously he was purchasing agent of Bernardin Bottle Cap Co., also of Evansville.

Kelvinator To Co-Sponsor 'Disneyland'

DETROIT—Kelvinator will join the automotive divisions of American Motors Corp., Nash and Hudson, in sponsorship of the ABC-TV show "Disneyland," W. E. Saylor, manager of advertising and sales promotion, has announced.

Saylor said Kelvinator will participate in sponsorship of a 1½-hour "spectacular," Sunday, July 17 (7:30 to 9 p.m., Eastern daylight time) on the opening of Disneyland Park near Anaheim, Calif., and will begin sponsorship

of the Wednesday night show on a regular basis when the fall-winter series begins Sept. 14.

First full-time Kelvinator commercials on the show will be presented Sept. 28.

Kelvinator will assume co-sponsorship of American Motors' half-hour portion of the hour-long show, Saylor said. Kelvinator commitments for co-sponsorship of the CBS-TV show "Danger" terminated with the performance on May 31.

Toolan Named Sales Manager for Cordley & Hayes

NEW YORK CITY—Cordley & Hayes, manufacturer of electric water coolers, announces the appointment of Lawrence D. Toolan as sales manager.

Toolan, who was formerly assistant sales manager with Cordley & Hayes, has had 12 years' experience in product distribution and

sales organization as national sales manager for the Phoenix Mfg. Co.; district sales manager for the American District Steam Co.; merchandising specialist for the Sturtevant Div. of Westinghouse Electric Corp.; and engineer and sales promotion associate for the American Radiator Co.

Emerson Radio Names Two New Vice Presidents

JERSEY CITY, N. J.—Michael Kory was recently elected vice president in charge of sales and Lester Krugman was elected vice president in charge of marketing, for Emerson Radio & Phonograph Corp., Benjamin Abrams, president, has announced.

Kory, whose jurisdiction will cover the sales of all Emerson products, has been director of sales since July, 1954. Previously, he had served as director of sales administration, manager of Emerson distributing subsidiaries, and as president of Emerson-New Jersey, Inc., distributor for Emerson products in northern New Jersey.

Krugman, who recently resigned as advertising director of the Bulova Watch Co., will supervise advertising, sales promotion, public relations, and market research.

Trade Show Offers Tips On Pre-Packaging Foods

NEW YORK CITY—Wholesale paper distributors picked up many tips on pre-packaging and refrigerating food at the annual trade show of the National Paper Trade Association held recently in New York's Waldorf-Astoria hotel.

Keyes Sales Corp. here put on live demonstrations throughout the show to dramatize the problems involved in pre-packaging refrigerated meats and foods.

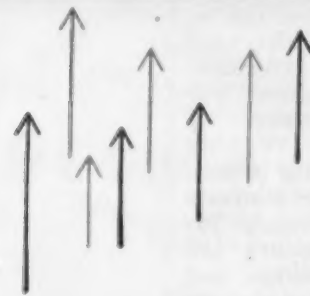
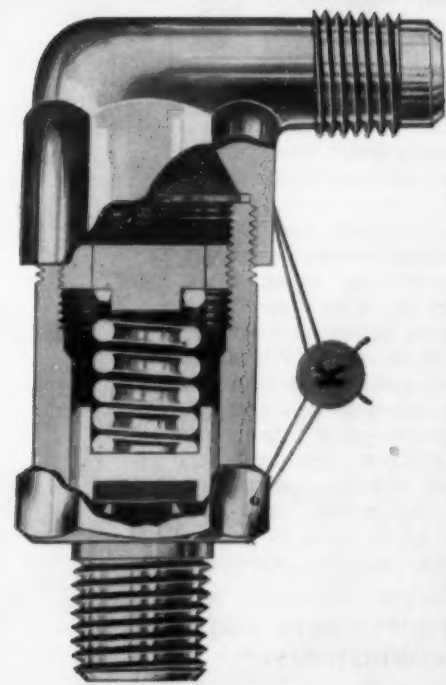
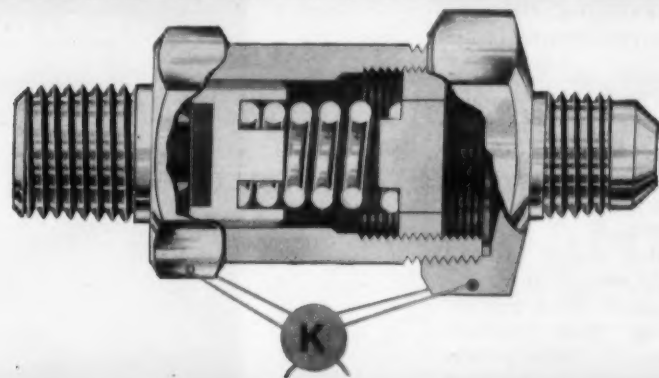
Along with paper distributors from all parts of the United States, the meeting was heavily attended by supermarket operators.

Various meats and chicken were pre-packaged and stored in a Bally self-service refrigerated display case. The case, lent by S. J. O'Brien Corp., New York City, was operated under normal refrigeration conditions in a large eighth floor suite.

a "relief" for the refrigeration industry by KEROTEST

Kerotest relief valves in both in-line and angle designs provide a "relief" to the customer requiring this type of valve. No longer is specification of seating material necessary. Through the use of one seating material, these valves may be used with all modern refrigerants except ammonia. These valves are designed and built to comply with the requirements of the American Society of Mechanical Engineers Code and Kerotest is authorized to apply the appropriate code symbols. For more detailed information on available pressure settings and sizes, write today for Kerotest booklet RV-1. We will be pleased to furnish you with this information.

KEROTEST MANUFACTURING COMPANY • 2523 LIBERTY AVE., PITTSBURGH 22, PENNSYLVANIA



Room Unit Field Called '\$300-Million Plum' By Du Pont In Announcing Consumer Survey Plan

By R. J. Thompson, Director of Sales, 'Kinetic' Chemicals Div.,
E. I. du Pont de Nemours & Co., Inc.*

Is there anyone here today who's interested in a 300 million dollar job . . . one that can pay you 500 million dollars three years from now?

It's not a pipe dream. It's here for you . . . all of you together . . . to collect and it's much better than a 50-50 bet you can do it, for the salary its practically guaranteed by millions of people who are only to be sold on the wares of your industry.

What is this seemingly fabulous job?

Actually it's the opportunity afforded by only one facet of your industry, for that 300 million dollar figure is the estimate of this year's sale of room air conditioners alone . . . one million three hundred and fifty thousand units of them that can be, and I repeat, can be, sold if we tackle the job of selling them on a sound basis keyed to the desire of the consumer.

SOLD ON FUTURE OF AIR CONDITIONING

I'm sold myself on the tremendous future of the air conditioning business, and our company, as a producer of just one of the components of the equipment, is sold on it. If we were not, I would not be here today.

The 300 million dollar plum I mentioned is only one of the fruits waiting to be picked from the air conditioning tree. New markets are opening up . . . every new building or factory on the drawing board today represents a market . . . every useable building not already air conditioned is a potential sales contact.

How much do we really know about what the consumer wants and really expects of air conditioning? How good a job have we done of telling him, in something more than glorious but meaningless phrases, what air conditioning can do for him?

More than a year ago, we in du Pont decided to evaluate our industry's activities along these lines . . . to see where we stood, where we were going, and how we were going to get there. We talked with many of you—manufacturers, distributors, wholesalers, contractors, servicemen—about the most important problem areas in marketing of air conditioning and refrigeration equipment, and from those talks we've tried to draw a true picture of the industry's sales needs.

HOW DO PEOPLE FEEL ABOUT AIR CONDITIONING?

Our investigation has shown quite definitely that one of the primary problems is the need for factual information on how people feel about air conditioning, why they buy it, what they like and dislike about it, and, in addition, investigations have developed the need for more specific information on the benefits of air conditioning.

The need for such facts can be summed up by the following quotation received from a prominent leader of one of the largest and best known manufacturers of equipment:

"We are most interested in finding out the factors that motivate people to buy air conditioning. Today both we and industry are floundering on this question, and there is a great need for the advertising and promotion folks to know how and where to slant their efforts."

None of the trade associations has ever conducted, nor to our knowledge do they plan to con-

duct, market research of any kind on these problems. Likewise, none of the equipment manufacturers has done any broad-scale research into the basic questions. The research the manufacturers have done has been mostly of a specific nature on their own equipment, such as brand names, etc.

This lack of knowledge or void presented a welcome opportunity for du Pont to provide a useful and continuing service to all industry members of ARI as well as all segments of the industry and similar to that which has been performed so successfully by our own division in the aerosol field for many years, and elsewhere in the company. For example, the Film Dept.

(cellophane) with their impulse buying habit studies; the Petroleum Chemicals Div. (tetraethyl lead) with their gasoline purchasing surveys, and the Polychemicals Dept. with their studies on paint brushes.

Such market research activity which we will carry out will be in line with our company's sales emphasis on service to its customers and the entire industry by broadening of the base or market and application of that research to sales problems, just as they are applied to manufacturing problems.

OTHER SURVEYS MAY FOLLOW

Although our intended but de-

finite program will outline only one specific study on room air conditioners, which will be made this summer and the results to be made available in the fall of this year for use by the entire industry in their 1956 marketing programs, it is our plan that this would be the first in a continuing series of surveys. The studies and surveys to follow will probably be conducted on an annual basis.

In our position as a supplier to all of the industry, we are in a unique position to supply the service and know that it will be useful in planning and selling . . . be objective and without bias . . . we will report only the facts.

There is much basic information to be developed in various fields and conditions are changing rapidly in many cases so that an extended program is needed. In addition, the building up of data for historical comparison and the drawing of trends is essential. Therefore, we would not start such a program unless it had been agreed and thoroughly understood

in the beginning to carry the market research and survey on for at least the next several years.

The cost of such surveys will be borne in their entirety by our company; however, the results will be contributed to the industry in which we as a refrigerant manufacturer are a small but important part.

We hope all of you will feel this to be a forward step in the field of promotion for ARI and all of its members. We know it will be helpful directly or indirectly to the entire industry represented by all manufacturers and suppliers that are members of the various product sections and all those in the refrigeration, contracting, and maintenance systems and the manufacturers of the very important item, refrigerants.

REFRIGERANT MANUFACTURERS' ROLE

I would like to point out a perfectly obvious fact, but too often silently accepted, that the refrigerant

(Concluded on next page)

SETTING THE PACE IN MOTORS FOR THE AC&R INDUSTRY



ALL-ANGLE OPERATION provided by sealed-in lubrication and advanced bearing designs permits mounting G-E shaded-pole motors shaft up, down, or at any angle.

SEALED-IN LUBRICATION minimizes motor maintenance and contributes to long motor life by protecting bearings from foreign materials and improper oiling.

Advanced design features help make



A MOTOR FOR EVERY APPLICATION

G-E shaded-pole-motor sales manager George Wright and engineering manager E. I. Ross inspect typical models in the most complete shaded-pole motor line available:

1.5 to 16 watt line is applied to condenser cooling fans and unit heaters and coolers.

15 mhp to 1/12-hp line—including G.E.'s new extended-winding models (higher power factor, lower current)—is used for remote unit coolers, and window air conditioners.

New 1/12 to 1/4 hp line—most powerful in industry—brings shaded-pole motor economy and multiple-speed operation to larger domestic and commercial air-conditioning equipment.

GENERAL ELECTRIC

*Address before the annual meeting, Air-Conditioning & Refrigeration Institute, Hot Springs, Va.

Du Pont Survey Plan--

(Concluded from preceding page)
erant, regardless of its name, is the basis or foundation on which the industries represented here exist and will continue to grow. We as a refrigerant manufacturer can say that our activities at the present time support a \$5 to \$6 billion dollar business, but we obtain but a fraction of 1% of the total.

Our analysis of those markets based on long-range estimates may be expressed by pointing out quite clearly that the refrigerant manufacturers have upped their capacities and facilities for the manufacture of chemicals used as refrigerants and they will be adequate to meet all of the long-term needs of both the air conditioning and refrigeration industries plus other well established uses. Our own "Kinetic" Chemicals Div., for example, has expanded manufacturing plants at Carney's Point, N. J.,

and East Chicago, Ind., with another large plant under construction and scheduled to go on stream at Louisville, Ky., within the next three months. A fourth major plant has been approved which will be located at Antioch, Calif., and a du Pont-Canada plant at Maitland, Que., is now under construction and scheduled for production in September of this year.

DEMAND WILL NOT EXCEED FACILITIES

Air conditioning and refrigeration equipment is bound to soar as the nation strives for year-round air conditioned living. We and the long-range estimators (industry leaders) say that those pyramiding markets for air conditioning, refrigeration, and expanding aerosol markets will not exceed within a decade or more the capacities now being built.

That is the faith and belief

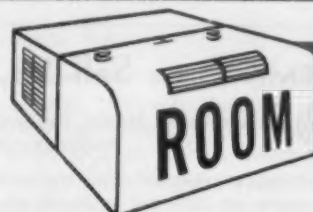
that we, our general management, and our executive and finance committees have in the future of your and our business or we would not be permitted to proceed as we have. Let us all plan, expand, promote, sell, and grow together to supply that coming market.

Chelsea Fan Names Ott Merchandise Manager

PLAINFIELD, N. J.—Appointment of Albert E. Ott as merchandise manager for the Chelsea Fan & Blower Co. here was announced recently by the company.

In this capacity, Ott will act as assistant to the executive vice president, supervising activities in advertising, sales promotion, service, and marketing.

Ott was formerly associated with the Electric Motor Div. of the Hoover Co. where for eight and a half years he held various supervisory and staff positions in the production and sales departments.



AIR CONDITIONERS

Cincinnati Utility Spurs Cooling Equipment Using 'Keep Cool with Electricity' Theme

CINCINNATI—An air conditioner and fan promotion is currently being sponsored by The Cincinnati Gas & Electric Co. in cooperation with *The Cincinnati Enquirer*, the utility has announced.

On display for the show is a representative selection of all types of air conditioners and fans available in this area. Also, a number of dehumidifiers are displayed, and there is an exhibit showing the operation of the heat pump.

To dramatize the promotion's

theme—"Get in the Swim—Keep Cool with Electricity"—a full-size swimming pool has been set up in the utility lobby. A collection of all kinds of equipment and paraphernalia used in commercial and sports diving has been provided by manufacturers of such equipment. Demonstrations showing how this equipment is used are being given each day.

Promotional aids planned to support this year's air cooling equipment activity include advertising in daily and neighborhood newspapers, window streamers for dealers, car cards, billboards, and radio spot announcements.

Urging dealers to participate in the promotion, the utility recalled that last year's air cooling show—"Mountain Climbing"—"was the most successful such promotion we have ever staged . . . the results prove that: 1954 sales of room air conditioners were 40% over 1953; 1954 sales of dehumidifiers were 39% over 1953; 1954 sales of attic fans were 39% over 1953."

Vornado Finance Plan Aimed To Put Distributors, Dealers In Competition

WICHITA, Kan.—A complete distributor, dealer, consumer finance plan designed to keep Vornado distributors and dealers in a financially competitive position has been announced by The O. A. Sutton Corp. here.

O. A. Sutton, president and chairman of the board, said the company, in cooperation with Commercial Credit Corp., had made arrangements for Vornado distributors and dealers to finance floor stocks and consumer credits.

"The demand for Vornado products has necessitated this move," Sutton said. "With this plan our dealers and distributors will be in an excellent position to stock and sell our products without shrinking their working capital."

Under the plan which is underwritten by the Sutton corporation, distributors and dealers will be able to finance inventories with minimum cash outlay, it was said. Dealers will have the full facilities of Commercial Credit Corp. at their disposal in handling the time buyer.

N. C. Courthouse Adds More Air Conditioning

GREENSBORO, N. C.—County commissioners have accepted a bid of \$6,471 submitted by Bullock & Humble Plumbing & Heating Co. for air conditioning the third floor offices of the county courthouse.

The original low bidder, Brownlow's, Inc., withdrew its bid of \$6,451 and the commissioners approved the Bullock & Humble bid.

Facilities on the second floor were air conditioned last year. County commissioners have indicated that they hope to add the cooling system to the first floor during the next fiscal year.

Oberc To Distribute Stoddard Filter In Southeastern Michigan

DETROIT—J. M. Oberc, Inc. here has announced its appointment as exclusive distributor for the Stoddard "Dust-Magnet" electrostatic air conditioner filter in southeastern Michigan.



UNIT BEARINGS for smaller motors provide larger bearing area, positive rotor alignment. TWO-BEARING DESIGN of larger motors permits most compact construction.

3-WAY MOUNTING is offered on most G-E shaded-pole motors: cushion end-rings, thru-bolts, resilient cradle bases. Also available are extra-high bases.

General Electric shaded-pole motors your best buy for 1956 equipment

INDUSTRY'S MOST COMPLETE LINE—1.5 WATTS TO 1/4 HP—MEETS ALL YOUR NEEDS

You see above some of the outstanding features of General Electric shaded-pole motors which best meet your needs for 1956 air-conditioning and refrigeration units. Here are more reasons why these G-E motors provide the low-cost answer to more compact, more powerful air-moving equipment of all types:

COMPACT, HIGH-QUALITY DESIGNS—Created by G.E.'s widely experienced motor engineers, each shaded-pole motor is built to high G-E standards. Unit-bearing design in smaller ratings and two-bearing design in the 1/12- to 1/4-hp line each provide the optimum in compactness, quiet operation, and long life.

LONG-LIFE BEARINGS—G-E shaded-pole motors bring

you the benefits of sealed-in lubrication. Oil grooves in shaft provide positive lubrication of filtered oil to bearing surfaces.

COOLER OPERATION—Advanced ventilation of G-E shaded-pole motors results in longer life through cooler bearings and windings. Higher efficiency (lower heat loss) of 1/12- to 1/4-hp line makes provision for motor ventilation in your products simpler.

EXPERT APPLICATION HELP from G-E engineers is available to you. For complete shaded-pole motor service, contact your local G-E Apparatus Sales Office today. Or write for Bulletin GEA-6134 to Sect. 704-49, General Electric Co., Schenectady 5, N. Y.

Progress Is Our Most Important Product

GENERAL  ELECTRIC

Seay Is Westinghouse Asst. Mgr., General Adv.

PITTSBURGH—E. W. Seay has been appointed assistant manager, general advertising, for Westinghouse Electric Corp., it was announced recently by Roger H. Bolin, general advertising manager.

Seay joined Westinghouse through the graduate student training course in 1941 and was a member of the New York sales staff until 1948 when he joined the sales promotion department.

Since April, 1954, he has been manager of advertising and sales promotion for the air conditioning division in Staunton, Va.

Free Frozen Meal For Food Plan Prospects

MUNSTER, Ind.—A "free meal" in the form of actual samples of the kind of food they would get if they bought a food plan, is being used by Munster Food Locker Service here to obtain inquiries about its freezer-food plan.

"All the ingredients for a frozen meal for the asking" are delivered to anyone who inquires about the plan. A complete explanation of the details of the plan are then given to the prospect in a follow-up.

NEMA Firms Sell 58,473 Freezers In April; Total of 239,776 Units Sold In First Four Months

Electric Farm and Home Freezers—Complete—Sales by Sizes—Units
Summary for April, 1955

Farm and home freezers complete with high and low side and cabinet where 50% or more of the net cabinet capacity is designed for freezing and/or storage of frozen foods.

Reports were received from 22 companies

Sizes	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1. 6 cu. ft. and under				
Chest Models	*	*	*	*
Upright Models	†	†	†	†
2. 7 and 8 cu. ft.				
Chest Models	*2,478	*107	*262	*2,847
Upright Models	†295	†....	†5	†300
3. 9 and 10 cu. ft.				
Chest Models	2,146	120	115	2,381
Upright Models	‡	‡	‡	‡
4. 11.0 to 12.4 cu. ft.				
Chest Models	4,733	471	255	5,459
Upright Models	\$5,018	\$26	\$278	\$5,322
5. 12.5 to 14.4 cu. ft.				
Chest Models	4,648	320	81	5,049
Upright Models	5,241	36	316	5,593
6. 14.5 to 15.4 cu. ft.				
Chest Models	7,243	153	91	7,487
Upright Models	\$	\$	\$	\$
7. 15.5 to 17.4 cu. ft.				
Chest Models	3,725	433	26	4,184
Upright Models	\$4,259	\$134	\$37	\$4,430
8. 17.5 to 19.4 cu. ft.				
Chest Models	4,212	253	142	4,607
Upright Models	4,763	39	24	4,826
9. 19.5 to 21.4 cu. ft.				
Chest Models	3,721	114	10	3,845
Upright Models	**	**	**	**
10. 21.5 cu. ft. and over				
Chest Models	636	11	4	651
Upright Models	**1,492	**....	**....	**1,492
Total Chest Models ..	33,542	1,982	986	36,510
Total Upright Models ..	21,068	235	660	21,963
Total All Models	54,610	2,217	1,646	58,473

Summary for First Four Months, 1955

Sizes	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1. 6 cu. ft. and under				
Chest Models	*	*	*	*
Upright Models	†	†	†	†
2. 7 and 8 cu. ft.				
Chest Models	*12,411	*528	*851	*13,790
Upright Models	†778	†21	†42	†841
3. 9 and 10 cu. ft.				
Chest Models	7,833	268	419	8,520
Upright Models	‡	‡	‡	‡
4. 11.0 to 12.4 cu. ft.				
Chest Models	21,407	692	635	22,734
Upright Models	\$23,540	\$582	\$709	\$24,831
5. 12.5 to 14.4 cu. ft.				
Chest Models	21,265	853	391	22,509
Upright Models	21,206	291	1,037	22,534
6. 14.5 to 15.4 cu. ft.				
Chest Models	23,075	653	205	23,933
Upright Models	\$	\$	\$	\$
7. 15.5 to 17.4 cu. ft.				
Chest Models	18,416	523	57	18,996
Upright Models	\$29,788	\$572	\$235	\$30,595
8. 17.5 to 19.4 cu. ft.				
Chest Models	10,152	599	294	11,045
Upright Models	17,171	125	158	17,454
9. 19.5 to 21.4 cu. ft.				
Chest Models	13,818	395	43	14,256
Upright Models	**	**	**	**
10. 21.5 cu. ft. and over				
Chest Models	2,101	33	15	2,149
Upright Models	**5,586	**3	**....	**5,589
Total Chest Models ..	130,478	4,544	2,910	137,932
Total Upright Models ..	98,069	1,594	2,181	101,844
Total All Models	228,547	6,138	5,091	239,776

*Chest Models for items 1 & 2 combined because of possible disclosure of individual company data.

†Upright Models for items 1 & 2 combined because of possible disclosure of individual company data.

‡Chest Models for items 3 & 4 combined because of possible disclosure of individual company data.

\$Upright Models for items 6 & 7 combined because of possible disclosure of individual company data.

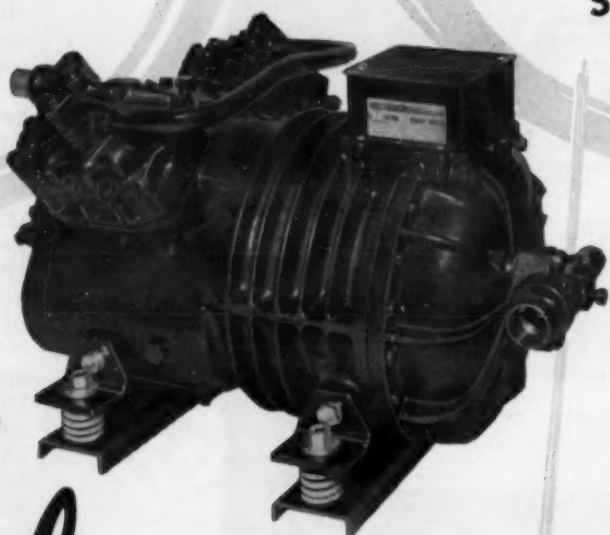
**Upright Models for items 9 & 10 combined because of possible disclosure of individual company data.

NOTE: Freezers of exactly the 5.5, 7.5, 8.5, etc., cubic feet sizes are included in the next higher size category.

Participating companies: Admiral Corp.; Appliance & Electronics Div., Avco Mfg. Corp., (Crosley & Bendix Divs.); Ben-Hur Mfg. Co.; Carrier Corp.; Deepfreeze Appliance Div., Motor Products Corp.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., Div. of General Electric Co.; International Harvester Co.; Kelvinator Div., American Motors Corp.; Maytag Co., The; Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; Quicfreez, Inc., (formerly Sanitary Refrigerator Co.); Revco, Inc.; Seeger Refrigerator Co.; Servel, Inc.; Sub-Zero Freezer Co., Inc.; Victor Products Corp.; Westinghouse Electric Corp.; Wilson Refrigeration, Inc.

HOT PROSPECTS
EVERYWHERE YOU LOOK

FOR
"BUILT-UP"
AIR CONDITIONING
SYSTEMS!



Servel

SUPERMETEC POWER UNITS

Super Money-Makers

INSTALL

SERVEL FOR:

BUSINESS OFFICES

SPECIALTY SHOPS

HOTELS and MOTELS

CLUBS and RESTAURANTS

HOMES and APARTMENTS

for Refrigeration Contractors and Service Engineers

Compact, quiet, full capacity — SERVEL SUPERMETEC POWER UNITS are super-right for remote-type applications. And you have plenty of prime prospects right now for air-cooling systems that can best be served with a "custom-built" installation.

SERVEL POWER UNITS can be mounted on any flat surface . . . using a minimum of space (7 1/2 HP Model measures only 23 1/2" x 17 1/2" x 16" high) . . . powered with suction-cooled motors requiring no water connection to the compressor. Installations are quicker, more profitable, made without extra plumbing costs.

SUPERMETEC POWER UNITS feature force-feed lubrication that eliminates the need for manual oiling. All moving parts are fully enclosed against moisture and dirt. High torque motors start easily, operate smoothly. Don't miss this real opportunity to build your profits with "built-up" installations POWERED BY SERVEL! Sizes to 7 1/2 HP to match almost any need.

Ask your Servel Wholesale Supplier for full details about the money-making line of Supermetec Full-Capacity Power Units — for High, Medium, and Low Temperature applications — or write the factory today.

SERVEL, INC., Commercial Refrigeration Division, Evansville 20, Indiana

THE NAME TO WATCH FOR GREAT ADVANCES
IN REFRIGERATION AND AIR CONDITIONING

NEW! JARROW

Curvall

SERIES 1400

REFRIGERATOR AND FREEZER DOOR GASKETS

NOW AVAILABLE!

Curved to fit

"Curvall" curved rubber gaskets make possible a substantial overall saving in your costs by

1. eliminating the high initial cost of pre-formed frame gaskets.

2. eliminating the high cost of shipping pre-formed gaskets.

3. requiring much less space for gasket storing.

"Curvall" is flexible, versatile, shaping itself to any desired bend or curve. Fits perfectly also on the straight sections of the door. No notching is needed on rounded corners. It's another example of the creative engineering Jarrow uses to solve manufacturer's problems.

Let us help you with your gasket problems. Jarrow engineers will work with you — show you how costs can be cut, time saved, new gaskets utilized profitably. Consult with us now.

see JARROW
for ALL your
gasket needs

for example:

- H1370—designed for refrigerator truck bodies.
- Plastic sill wiper gasket for cold storage doors.
- Sponge rubber gaskets.
- Plastic door gaskets in color.

JARROW PRODUCTS INC.

420 NORTH LA SALLE STREET • CHICAGO 10, ILL.

INSIDE DOPE

Learn to live and laugh—
Thus delay your epitaph

By **GEORGE F. TAUBENECK**

(Concluded from Page 1, Col. 1)

their slice, the Indianapolis Speedway will be sold for a housing development, the President's first ball to start the season in Washington will be low and outside, umpires will be unpopular, and boys will occasionally kiss girls.

"MENDES-FRANCE will increase the consumption of milk in France by .004% and wine drinking will increase 4.234%.

"STOCK PRICES—General firmness flavored with caution at one end and optimism at the other will keep some stock prices at year-end levels, while those you didn't buy will go up and whatever your own will go down.

"RUSSIA will import more goods unless they don't, and will or will not prevent the arming of West Germany. They will suggest four-power meetings 14 times, denounce the United States daily, and drink 10% more vodka than in 1954.

"WHOLESALE PRICES—There will be more of these, and some retailers will find they are wholesalers, and the wholesalers will become retailers, and one will be able to figure out what the wholesale price index means.

"MOVIES—These can't get any wider or any louder, and so we predict some entrepreneur in Hollywood will try one with a good plot.

"TUFTED TITMICE will be seen earlier this spring by 1,566 bird watchers who will report this unusual occurrence in their journals.

"WAGES—will go up, except yours.

"WEATHER—will be variable with cold spells in the winter, heat waves in the summer, rain, and everyone will talk about it.

"SOCIETY—Debutantes all over the country will continue to get presented to people they already know, the junior senator from Wisconsin will not be invited to several White House teas, 194,234 bon bon dishes will be presented as bridal gifts to 1,000 brides and 193,234 bon bon dishes will be given away as bridge prizes.

"PRODUCTION will continue to be higher than consumption, and the extra butter will be put in storehouses to get rancid. In this way we keep our standard of living higher than if we ate the butter."

Out of Our Mailbag

Union Asbestos & Rubber Co.
332 S. Michigan Ave.
Chicago 4, Ill.

Editor:

I enjoyed the one about the two bucks (deer, that is) and am sending the opposite of this for what it's worth.

Two Does were shooting the breeze.

"Some days you can't even make a buck," signed one.

H. O. KIRKPATRICK

Community Public Service Co.
Ft. Worth Electric Bldg.
Ft. Worth 2, Texas

Editor:

I can't believe that you were serious in your query as to "What is an Ama?"

Do you mean to stand right there and tell me that you've never been to the famous "Cyclorama" in Atlanta? It was drawing fascinated spectators several decades before "Cinerama," "Motorama," "Foodarama," and "Colorama" were even dreamed of. "Ama," or more properly "Rama" is from the Greek and means "sight, spectacle, or that which is seen."

Did you hear the story about the man who was driving down a highway when one wheel came off. The driver retrieved the wheel but couldn't figure what he was going

to do for lugs. He had "that feeling" of being watched, turned around, and sure enough, he was stopped in front of an insane asylum and one of the inmates was peering intently through the bars.

The hapless driver thought he'd have a little fun, so he said to the inmate: "You see my problem here. What would you do under the same circumstances?"

Without hesitating, the asylum resident said: "Why, I'd take ONE lug off each of the three other wheels and that'd be enough to hold the fourth wheel on until you get to the next town."

The autoist was truly impressed and exclaimed "How did you ever think of that? Why are you in that asylum?"

"Look, Mister," replied the "nut," "I'm just CRAZY, NOT STUPID!"

Oh, yes, that reminds me. Please send me a copy of "You'll Love This One." Dollar attached. Thanks.

JACKSON COX

Last Thoughts

One can draw up on paper logical plans for a fair and efficient operation of the whole industrial system on the basis of social ownership, but no such system has been or will be wise or practicable in action. The State under the most democratic theory and practice will become too huge and cumbersome, if it seeks to control directly all economic activity.—NORMAN THOMAS.

Last Laughs

"I hear that Old Indian Snake Oil is good for man or beast."

"Your right, lady," nodded a druggist.

"Then I'll take three bottles. Oughtta be exactly right for my husband."

"I've fired our chauffeur," stormed Mr. Bigbiz. "He nearly killed me with his erratic driving."

"Oh, please give him another

chance," begged Mrs. Bigbiz.

"An egoist," Ava Gardner defines, "is a man who isn't thinking about me."

The trouble with Russian roulette is that there aren't enough Russians playing it.—*Imp.*

Some women declare that Bikini swim suits are indecent. Others have good figures.—*Wall Street Journal.*

"Mrs. Blank received guests in a deep violent dress."—*Fredericksburg Free Lance-Star.*

Reformed Women Will Gather Here.—*Gettysburg Times.*

Members are urged to bring any eligible women who might wish to become mothers.—*Crawfordsville Journal and Review.*

"The substitution of large buses for streetcars is an obsolete necessity."—*Detroit News.*

RIGID

under heaviest loads...



NOTE: Ask about Houdaille natural-draft condensers for upright freezers.

FREEZER SHELVES literally groan when the woman of the house starts "packin' in supplies"—but Houdaille-Hershey STEEL shelves stay put, remain rigid, and won't sag! Smooth plate shelves are easiest to clean, and heat transfer is fast under heavy freezer loads!



TUBE-ON-PLATE construction is not only the most durable freezer shelf, but is most practical from the standpoint of engineering simplicity and flexibility in design. Houdaille manufactures to your specs.

STEEL FREEZER SHELVES

by
**HOUDAILLE-
HERSHEY**

ON ALL COUNTS, steel is ideal for upright freezer shelves. Obvious end-use benefits of strength and trouble-free service are matched as well by Houdaille's advanced manufacturing techniques—reducing costs to you. Thanks also to the workability of STEEL—scrap losses in fabricating, shipping, and final assembly are practically eliminated. Further economies result from clean refrigerant passages achieved through controlled-atmosphere furnaces used in the brazing process. No extra cleaning necessary!

Electro zinc plating provides a highly ductile, durable basic metal protection. A new type Du Pont finish far surpasses established standard test requirements.

Cool pastel colors, also available, represent a definite sales advantage in showroom display.

Call us now. Our Complete Engineering and testing facilities are at your disposal.

*Say "Hoo-dye"



HOUDAILLE-HERSHEY REFRIGERATION DIVISION

1900 FOSS PARK AVENUE . . . NORTH CHICAGO (GREAT LAKES), ILLINOIS

MANUFACTURERS OF Evaporators, Cabinet Cooling Plates, Freezer Shelves and Condensers.

IDEAL
Speed-Freeze
PRODUCTS

**BEVERAGE COOLERS AND
INSTANTANEOUS DRAFT
BEER COOLERS.**
(With Refrigerated Faucets)

WRITE
IDEAL COOLER CORPORATION
2953 EASTON AVE. • ST. LOUIS 8, MO.

March Sales Set Record for Florida Utility; Air Conditioner Sales Up 51%, Freezers 36%

MIAMI, Fla.—March sales of household electrical appliances and oil heaters in territory served by the Florida Power & Light Co. exceeded by nearly \$2 million the best sales record established for that month, the utility reported.

Sales were 41% higher than in the same month last year and were the fourth largest of any month in any year, the utility declared.

For the quarter, air conditioner sales were 51% ahead of the same period last year. Freezers were up 36%, dishwashers 31%, ranges 25%, garbage disposers 25%, automatic washers 17%, and re-

frigerators 15%.

Sales increases over last year in major appliances included dishwashers 111%, ranges 88%, clothes dryers 87%, home freezers 76%, refrigerator 70%, garbage disposers 67%, automatic washers 42%, and air conditioners 41%.

The utility asserted that first-quarter sales exceeded those of any previous year. They were 19% higher than the same period in 1954 and about equal to the first seven months of 1951.

Florida Power & Light serves the southern portion of the state and most of the east coast.

NEMA First Quarter Refrigerator Sales Reach 1,112,546; 392,744 Sold During March

Summary for March and First Three Months, 1955
Complete Electric Household Refrigerators Only—Sales By Sizes—Units

MARCH (15 Companies)				
Sizes	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1. Less than 4 cu. ft. . . . .	....	....	....	....
2. 4 cu. ft.	1,577	....	37	1,614
3. 5 cu. ft.	41	....	9	50
4. 6 cu. ft.	1,951	1	458	2,410
5. 7 cu. ft.	9,114	867	1,721	11,702
6. 8 cu. ft.	66,860	342	11,593	78,795
7. 9 cu. ft.	30,732	826	2,180	33,738
8. 10 cu. ft.	47,796	1,472	2,651	51,919
9. 11 cu. ft.	78,149	1,260	5,634	85,043
10. 12, 13 cu. ft. and up . . .	123,354	1,020	3,129	127,503
11. Total	359,574	5,788	27,412	392,774
Refrigerators having 2 exterior doors. (All sizes included in above.) . . .				
	82,611	700	2,567	85,928

FIRST THREE MONTHS (15 Companies)				
Sizes	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1. Less than 4 cu. ft. . . . .	....	....	....	....
2. 4 cu. ft.	4,185	....	278	4,463
3. 5 cu. ft.	115	11	19	145
4. 6 cu. ft.	4,390	1	1,325	5,716
5. 7 cu. ft.	29,777	1,935	3,899	35,611
6. 8 cu. ft.	206,848	483	23,725	231,056
7. 9 cu. ft.	105,414	1,843	7,226	114,483
8. 10 cu. ft.	160,982	2,920	7,362	171,264
9. 11 cu. ft.	219,732	2,591	10,031	232,354
10. 12, 13 cu. ft. and up . . .	308,924	2,190	6,340	317,454
11. Total	1,040,367	11,974	60,205	1,112,546
Refrigerators having 2 exterior doors. (All sizes included in above.) . . .				
	191,383	1,602	5,014	197,999

Participating companies: Admiral Corp.; Appliance & Electronics Div., Avco Mfg. Corp. (Crosley & Bendix Divs.); Deepfreeze Appliance Div., Motor Products Corp.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., Div. of General Electric Co.; International Harvester Co.; Kelvinator Div., American Motors Corp.; Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; Quicfrez, Inc. (formerly Sanitary Refrigerator Co.); Seeger Refrigerator Co.; Servel, Inc.; Westinghouse Electric Corp.

Sales of Electric Household Refrigerators By Distributors to Dealers by States

Summary for First Three Months, 1955		UNITES	
STATES	UNITES	STATES	UNITES
Alabama	11,234	New York	89,182
Arizona	5,095	North Carolina	16,210
Arkansas	8,216	North Dakota	2,011
California	67,558	Ohio	46,211
Colorado	7,427	Oklahoma	10,903
Connecticut	12,790	Oregon	7,195
Delaware	2,129	Pennsylvania	53,490
District of Columbia	10,532	Rhode Island	5,638
Florida	26,800	South Carolina	8,862
Georgia	16,591	South Dakota	2,676
Idaho	2,070	Tennessee	15,375
Illinois	49,169	Texas	41,909
Indiana	25,276	Utah	2,903
Iowa	12,124	Vermont	886
Kansas	7,159	Virginia	12,111
Kentucky	10,763	Washington	10,493
Louisiana	12,055	West Virginia	9,053
Maine	3,056	Wisconsin	15,332
Maryland	11,477	Wyoming	912
Massachusetts	19,625	Total United States	890,197
Michigan	41,967	Participating companies: Admiral Corp.; Appliance & Electronics Div., Avco Mfg. Corp. (Crosley & Bendix Divs.); Deepfreeze Appliance Div., Motor Products Corp.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., Div. of General Electric Co.; International Harvester Co.; Kelvinator Div., American Motors Corp.; Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; Servel, Inc.; Westinghouse Electric Corp.	
Minnesota	11,952		
Mississippi	6,671		
Missouri	23,912		
Montana	2,422		
Nebraska	6,970		
Nevada	1,396		
New Hampshire	2,256		
New Jersey	27,457		
New Mexico	2,696		

Hotpoint Adds Casters to New Refrigerator-Freezer

CHICAGO—Hotpoint Co. has introduced a new combination 11.3-cu. ft. refrigerator-freezer that rolls out for cleaning, has a 123-lb. food freezer at the bottom, and has an eye-height fresh food compartment.

In announcing the new refrigerator-freezer (5EHU113), Fred C. Margolf, manager, refrigerator sales planning, Hotpoint, said that the rollers on the refrigerator make the "Eye-Hi" model the only model in the industry so equipped.

Margolf stated that a recent survey among 50,000 American women throughout the United States showed that 79.6% wanted "rollers or casters" attached to the bottom of their new refrigerator.

He said the survey showed that women desired this feature because . . . "hard to clean underneath . . . wanted to decorate and couldn't . . . hate to see dirt and dust lying underneath."

The casters are attached to the four corners of the refrigerator bottom. A toe lever locks them in place. To move the refrigerator-freezer, the user releases the toe lever and the refrigerator can be moved freely.

Replacing the toe lever in its original position locks the refrigerator in place again. Tests show the average woman can move the refrigerator without help.

HOUSEHOLD REFRIGERATION

New Camera Techniques Make Unique Film

American Motors 'Circarama' To Make Debut at Disneyland Park on July 17

HOLLYWOOD, Calif.—An advanced motion picture development, "Circarama," consisting of a continuous image focused on a 360° screen, will be introduced at Disneyland Park on July 17 by American Motors Corp., according to George Romney, president.

Contracts for the completion of the technical work on Circarama were signed recently by the Detroit manufacturer.

Circarama is planned as a free attraction in American Motors' exhibit in the "Tomorrowland" area of Walt Disney's amusement park, at Anaheim, Calif., 22 miles south of downtown Los Angeles.

"A new step forward in the motion picture art, Circarama consists of a synchronized battery of Eastman 16 mm. model 25 projectors which simultaneously focus color movies on 11 individual screens arranged in a complete circle," it was explained.

"Circarama constitutes the first known application of sound motion

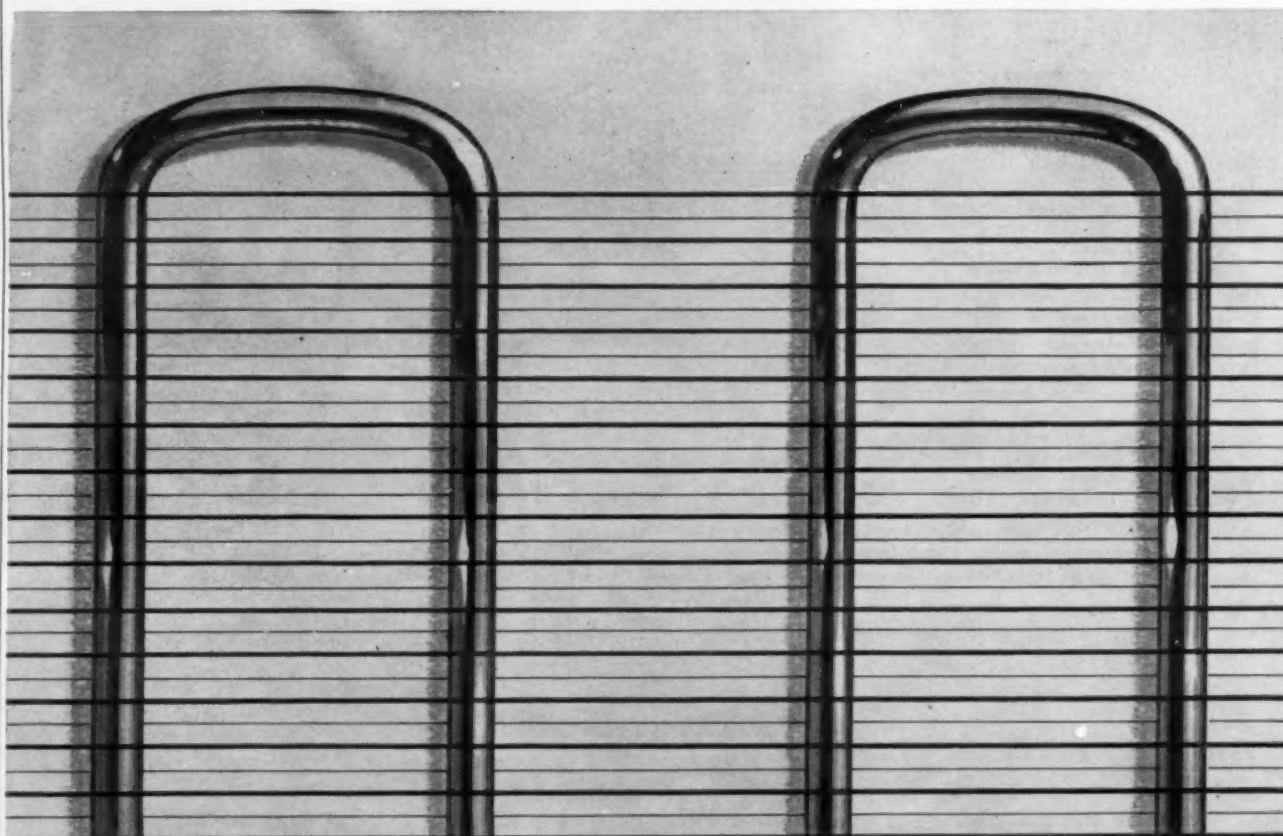
pictures to the circular screen. Spectators, standing in the middle of a specially-built theater, view the continuous action on an overhead screen 8 ft. high and 40 ft. in diameter, which completely encircles the audience.

"The Circarama screen currently being built in Hollywood for American Motors has no counterpart in the entire history of drama.

"In actual operation, a series of images appear on Circarama screen No. 1 and move consecutively to the adjoining screens until they reach screen No. 11, when they give way to ensuing photographic frames, projected in sequence."

Circarama will be the central attraction in the 3,600-sq. ft. American Motors exhibit, jointly sponsored by the Hudson, Nash, and Kelvinator divisions. Institutional and product displays also are planned for the exhibit, which American Motors has leased for five years on an exclusive basis.

Bundy develops square



Another Bundy "first" develops greater efficiency, more secondary surface per coil leg, more cooling area for confined-space applications

Harry Alter's New DEPENDABOOK

GET IT AND SAVE!

No. 162
1955

OVER 10,000 ITEMS
ILLUSTRATED, DESCRIBED AND PRICED

Save Money On
REFRIGERATION PARTS and Supplies
...Also Electric Motors & Parts, Air Conditioning
PRICED RIGHT!
"Harry Alter gives you snappy service"

The HARRY ALTER CO. Inc.

1728 S. Michigan Ave., Chicago 16, Illinois
134 Lafayette Street New York 13, N. Y.
122 Parkhouse Street, Dallas 7, Texas

WHY BUNDYWELD IS BETTER TUBING



Bundy starts as a single strip of copper-coated steel. Then it's . . .



continuously rolled twice around laterally into a tube of uniform thickness, and



passed through a furnace. Copper coating fuses with steel. Result . . .



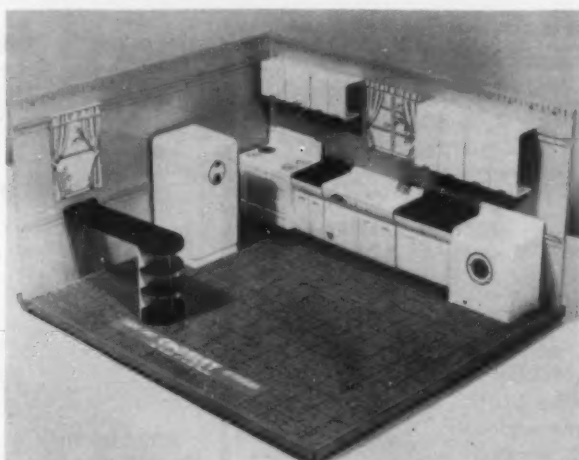
Bundy, double-walled and brazed through 360° of wall contact.



NOTE the exclusive Bundy-developed beveled edges, which afford a smoother joint, absence of bead, and less chance for any leakage.



HERE'S A KITCHEN that fits neatly into a suitcase. Not life size, or course, as the models of stoves, refrigerators, and other appliances are scaled 1 in. to 1 ft. in new selling aid created by Carter & Galantin for the Crosley-Bendix division of the Avco Mfg. Corp.



HERE'S A KITCHEN in the planning stage (not necessarily a finished example), and how easy it is to move those appliances around. This pleasant method of kitchen planning is now available to housewives.

Crosley-Bendix Kitchen Planning Kit Helps Housewife Arrange Own Layout

CHICAGO—To help sell appliances, Crosley-Bendix Home Appliance Divs. of Avco Mfg. Corp. is employing a model kitchen, which could easily fit into a doll's house, to enable the housewife to see colors and room arrangement.

This pint-sized kitchen comes in a kit designed for salesmen of Crosley-Bendix by Carter and Galantin, Chicago producer of sales tools.

The many components of the kitchen planning kit fit neatly into

a suitcase 1½ ft. long, 15 in. wide, and 6 in. deep. There are little plastic refrigerators, stoves, built-in ovens, shelves, cabinets, washers and dryers; different colored ceilings, linoleum and wall surfaces, including samples of the new plastic-coated kitchen wallpaper.

For easy figuring and viewing, the models are scaled 1 in. to 1 ft.

Movable walls easily are maneuvered to encompass the floor space of any size kitchen. A room-divider fourth wall is provided for

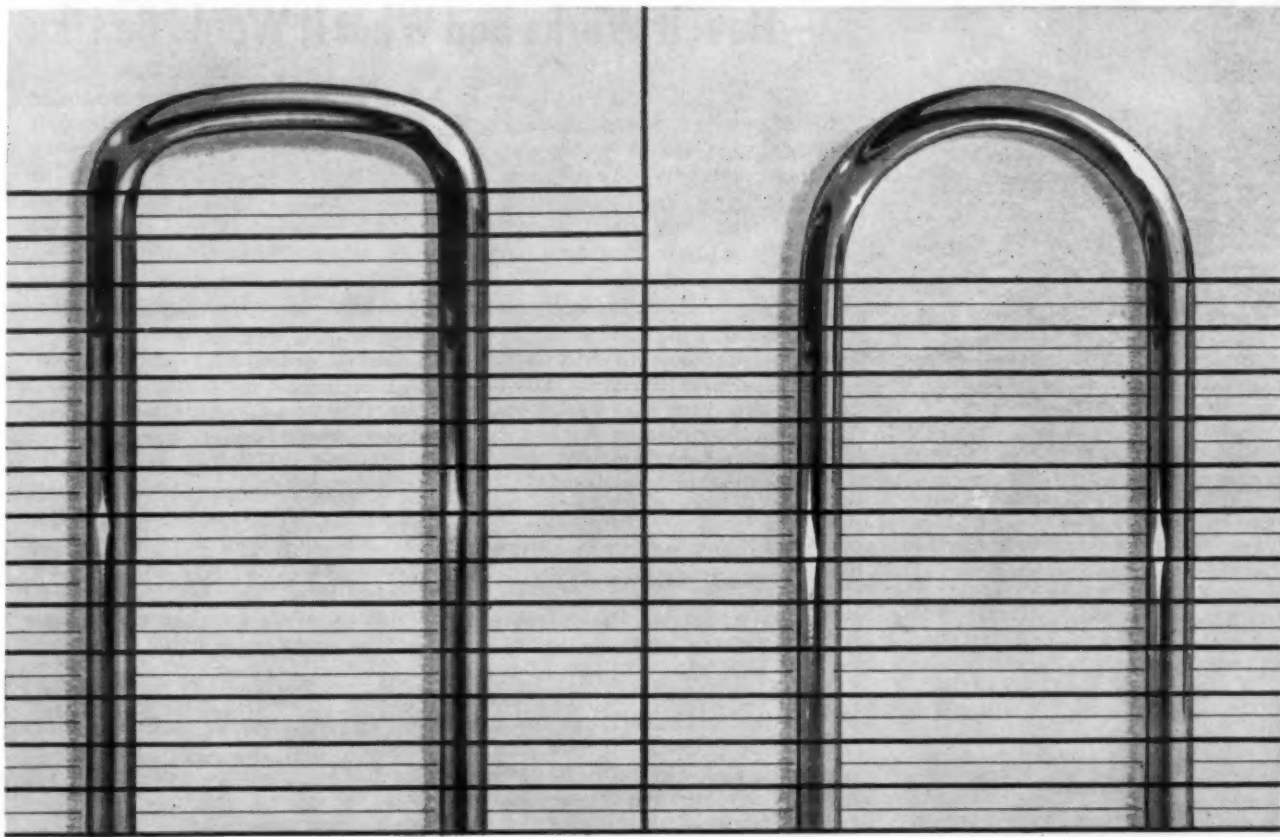
planning U-shaped or three wall kitchens.

There are little doors and windows to put into place, and incidentally, that is the first step.

The next step is to place the three major appliances—the dishwasher sink, the range, and refrigerator—to form a step-saving triangle. The remaining space may be filled with cabinets.

The materials in the kit are so flexible that they can be arranged in any manner.

end condenser coils!



Now Bundy introduces another "first" to the refrigeration industry—square end condenser coils! This new design gives you more secondary surface per leg length of the coil, providing for more cooling surface.

You get more efficiency from the same size condenser with the Bundy square end coil. Approximately 6 more wires can be attached across each coil leg, making it possible to get greater cooling efficiency in a smaller condenser.

Finding new ways to save our customers time and money is a full-time job with us. And our success depends upon new designs—expert designs carefully developed and perfected by topnotch Bundy engineers, working with dependable Bundyweld Tubing.

Remember that Bundyweld is leakproof by test,

thinner-walled yet stronger, has high thermal conductivity, and takes easily to standard protective coatings.

Get the advantages of dealing with the leader in tubing manufacture. Compare our plus-services of unexcelled fabrication facilities, expert engineering help, custom packaging of orders, and prompt, on-schedule delivery.

Check into our new square end coils for your own refrigeration designs. And for expert assistance on your tubing problems: call, write, or wire us for prompt information.

BUNDY TUBING COMPANY
DETROIT 14, MICHIGAN

BUNDYWELD TUBING®

DOUBLE-WALLED FROM A SINGLE STRIP

Bundy Tubing Distributors and Representatives: Cambridge 42, Mass.: Austin-Hastings Co., Inc., 226 Binney St. • Chattanooga 2, Tenn.: Peirson-Deakins Co., 823-824 Chattanooga Bank Bldg. • Chicago 32, Ill.: Lapham-Hickey Co., 3333 W. 47th Place • Elizabeth, New Jersey: A. B. Murray Co., Inc., Post Office Box 476 • Los Angeles 58, Calif.: Tubasales, 5400 Alcoa Ave. • Philadelphia 3, Penn.: Rutan & Co., 1717 Sansom St. • San Francisco 10, Calif.: Pacific Metals Co., Ltd., 3100 19th St. • Seattle 4, Wash.: Eagle Metals Co., 4755 First Ave., South • Toronto 5, Ontario, Canada: Alloy Metal Sales, Ltd., 181 Fleet St. E. • Bundyweld nickel and Monel tubing are sold by distributors of nickel and nickel alloys in principal cities.

SPECIALTY SELLING METHODS

Manufacturer Stresses Need—

For Creative Thinking, Advertising, and Selling and Offers Concrete Suggestions

GRAND RAPIDS, Mich.—"Pb" is the chemical symbol for lead. Too many of us have too much "Pb" in our thinking, our advertising, our selling, and our pants, Ed Hegarty, director of sales training for the Westinghouse Electric Appliance Div., told Michigan appliance dealers convening here.

We have lead in our thinking when we think pessimistically and blame everyone but ourselves for our troubles, Hegarty said. He urged dealers to "think upwards." He pointed out that customers blame the dealer himself for everything that happens in his store.

"Nothing happens to you that isn't your fault," Hegarty declared, "which is a good thing. When it is somebody else's fault, you can't do anything about it. But when it is your fault, you can do something about it."

We have lead in our advertising when we begin to depend on it to bring in business by itself. He deplored passive, purposeless advertising and suggested that the dealer run only advertisements that make him do something, such as offering a premium for a demonstration.

"The most powerful advertisement you could run," Hegarty averred, "would be one headed, 'This week, I am going to call on every home in (a specified area)'. Then do it, even if you have to shut up the store."

He urged dealers to tie in more closely with national advertising. He suggested that when the manufacturer of a product they carry runs an advertisement in a national magazine, they clip it out and paste it in the front window with an invitation to passersby to "see it here."

Then the dealer should get on the telephone and call up customers. Ask them if they saw the

advertised product in the magazine. Then advise them that he has it on his floor. Invite them to come in and see it.

"We tried this with a dealer in Mansfield," Hegarty related. "We made 20 telephone calls. Out of the 20, six people came into the store to see the appliance."

We have lead in our selling, he continued, when we do not make our demonstrations correctly. We talk too much about mechanical features and not enough about what the appliance will do for the customer, he asserted.

Hegarty recommended techniques used by one salesman who "showed me how the door of that freeze chest could be used as a loading shelf, how many ice trays it had, how the ice cube trays work, how many frozen food packages could be put in the space. And afterward I checked and he had covered 14 points."

"If every man drawing pay as a salesman made demonstrations like that we'd sell more than the 480 million appliances the industry expects to market in the next 10 years," said Hegarty.

He urged the dealers themselves to keep making demonstrations continually. In order to demonstrate properly, you have to do it all the time, he noted. It is very easy to get rusty if you slack off.

Another suggestion was that the dealer rent himself a tape recorder, give his sales talk into the recorder, and then play it back. You will be surprised how it sounds and would probably fire a salesman that gave a talk like that. It will show up your weaknesses.

The lead in our pants, Hegarty declared, it what keeps us tied to our chair. The toughest problem we have is to get salesmen to go out and call on old customers. They are your best source of new leads.

Dealer Gets Results—

From Creative Thinking That Leads to Selling-In-Home with Callahan's Caravan

BUFFALO — Callahan's appliance store, 837 Genesee St., has launched a new selling-in-the-home program that features bonus gifts, free delivery, free installation, free demonstration, and free parts and service for one year.

Charles Callahan, owner of the store, has put a crew of salesmen on the road to promote the new plan. But instead of cold canvassing, the salesman comes to the prospect's home at his request.

Leads are being developed through a newspaper advertising program which explains the plan to prospective customers and invites them to mail in a coupon to have a salesman call at their home.

The firm calls its new in-the-home selling project, "Callahan's Caravan." Prospects are asked to check the various appliances in which the are interested, including washers, dryers, refrigerators,

freezers, ranges, ironers, or others they may specify.

To introduce the plan, the store offered a choice of these bonus gifts with the purchase of any Norge washer, dryer, or other major appliance: Men's or women's watch valued at \$65, clock radio valued at \$49.95, automatic coffee maker valued at \$34.95, steam iron and hand mixer at \$19.95.

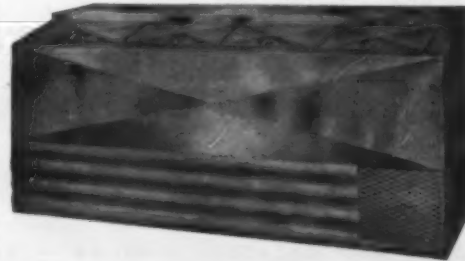
Callahan's also stresses big trade-in allowances on old appliances and emphasizes that it services what it sells.

Promotional activity launching the new plan features the theme: "Callahan's Caravan Is Western New York's Only Appliance Store on Wheels."

The store is bidding for business especially from persons who find it difficult to get out to shop.

The initial promotional effort was reported to have brought in a considerable number of inquiries.

"A CASE OF COOL JUDGMENT"



FLO-COLD
DRINKMASTER
STAINLESS STEEL
CUBER — COOLER.

SOLD THRU DEALERS ONLY
WRITE

United Refrigerator Engrs.
MENOMINEE, MICH.

AVAILABLE IN SIZES 4 TO 10 FT.



NEW AIR CONDITIONER
anyone can afford!

AIR COOLED...COOLS ENTIRE HOUSE!

Uses no water. 5 times cooling capacity of most window units. Also available for roof or ceiling installation. Standard electrical connections. 5-year guarantee.

WRITE today for details. Franchise dealerships available.
GENERAL AIR CONDITIONING CORP.
Dept. AD-4, 4542 E. Dunham St., Los Angeles 23, Calif.
NATIONWIDE SALES AND SERVICE



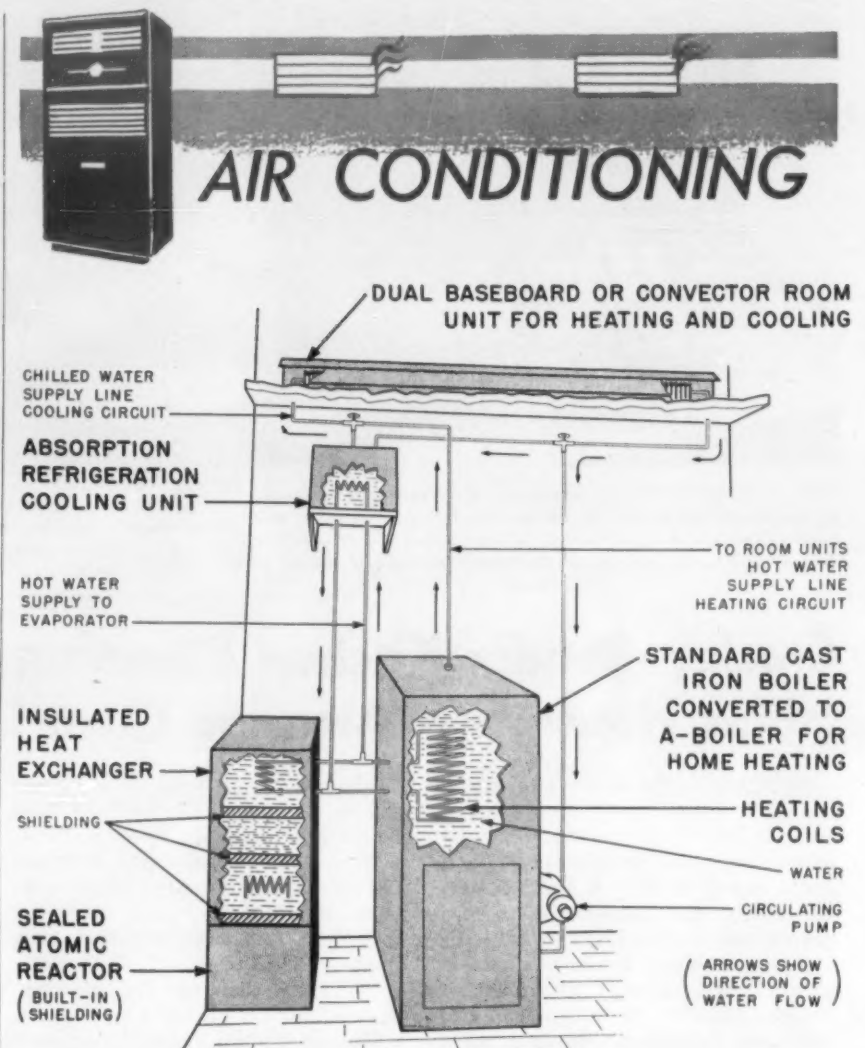
AIR CONDITIONING AND FORCED AIR HEATING SYSTEMS COMBINED IN MINIMUM SPACE. UTILIZES EXISTING HEATING DUCTS.

FLOOR MODEL
2 h.p.
Compact unit requires no ducts, does an exceptional cooling job in the average home. Ready for easy installation.



ATTIC, ROOF OR OUTSIDE INSTALLATION UNITS.
2 and 3 h.p.
Completely waterproof and insulated against heat of sun. Can also be used for slab floor or basement tie-in. Uses existing ducts.

THE MASTER SERVICE MANUALS - - -
— — — and other books of the Refrigeration Library are depended upon as textbooks in trade schools from coast to coast.
BUSINESS NEWS PUBLISHING CO., DETROIT



SKETCH SHOWS basement of average home with A-Boiler system installed. Equipment may also be placed in garage, back of house, or other space. Presently installed boilers need not be removed for conversion to A-System. After installation, A-System would save 70% or more of conventional fuel and electrical costs for operating year-round heating-cooling systems it is claimed. The new concept marks the first proposal to put atomic energy to work actually within the home itself. Shielding is said to make reactor safe.

Atomic-Powered Home Heating and Cooling —How It Works and What It Would Be Like

NEW YORK CITY—How an atomic-powered home heating and cooling unit would work was described recently by Frank L. Phillips, New York consulting engineer who has been associated with the Atomic Energy Commission.

His explanation followed an announcement by Robert E. Ferry, general manager of the Institute of Boiler and Radiator Manufacturers that such a system, powered by a nuclear reactor hooked up to a boiler and cooling unit, could be a "practical reality possibly within a few years."

COMPLETE SYSTEM WOULD COST ABOUT \$1,500

Ferry estimated that a complete home heating and cooling system would cost about \$1,500 to install and about \$50 a year to operate.

Phillips indicated that the basic plan for a home atomic heating and cooling system is already under development by several organizations.

He outlined the basic plan, as reported in the *Times*, as follows:

"The reactor, sealed and set going at the factory, would be adjusted, through the use of controlling graphite rods, to heat a liquid in an inner coil to 400° F.

"The coil would transfer to another coil, probably filled with mercury, about the same amount of heat. The second coil would be surrounded by water in a chamber directly above the reactor and separated from it by a lead shield.

"The heat in the water surrounding the second coil would be transmitted vertically through another lead. Then would come, in vertical order, another lead shield, a chamber filled with a viscous fluid to shield out the gamma rays, a third lead shield, and finally, the heat exchanger.

"The temperature in the heat exchanger would be 350 to 375° F., compared with the original 400° F. heat of the reactor. The difference would result from loss of heat during convection through the shields.

"In the heat exchanger, another

coil would pick up the heat and carry it to the refrigeration unit and the boiler. The final coil in the boiler would produce water of about 225° F."

The nuclear reactor, about twice the size of an automobile battery, would use a secondary fissionable material or some form of radioactive ash, it was reported.

Ferry noted that because critical elements necessary for chain reaction would not be present, there would be no possibility of explosion.

A single charge of fissionable material would be sufficient fuel to heat and cool a home for six years and would cost an estimated \$300. The reactor could be replaced with another sealed unit at the same price after its charge had been exhausted.

The "A-boiler" system, as it is called by Ferry, will eliminate smoke, dirt, and soot as nuclear fission requires no oxygen. It will also eliminate chimney and flues from new construction, thus helping to reduce building costs, he said.

LACK OF FISSIONABLE MATERIAL IS ONLY HITCH TODAY

Phillips noted that except for inadequate supplies of fissionable material, the home A-boiler could be produced today. He declared that greatest progress is being made in developing equipment for large utility and power plants.

However, he continued, since the home A-boiler is simple compared to its giant cousin, it is "reasonable to expect very rapid progress once the supply of atomic fuel begins to increase more swiftly."

Except for the reactor and heat exchanger units, all equipment, including heating-cooling convectors and baseboards, boilers, and absorption type cooling units required for the home system, is on the market now, he asserted.

All homes with this basic equipment will be most readily convertible to the A-boiler system when it becomes available, he noted.



**a
M-I-L-E
of tube**

**in
these
few feet**

Reel Advantages for You as a Wholesaler

Wolverine's new flat carton is round; it rolls, reduces lifting and speeds up handling. It has a hole in the center for easier carrying. Identifying nomenclature is reversed—color coded, too. Best of all, the carton contains top-quality Wolverine tube—your assurance of repeat business.

Reel Advantages for your Customers

The carton rolls like a hoop; a center hole makes it easy to carry to the job, up a ladder, wherever it's needed. A gummed-tape edge (Zip—and it's open) saves the carton from mutilation. The carton can be used as a reel—tubing can be pulled out as needed and used right to the very end. A new small-diameter end seal keeps tube dry and clean on the inside. Yes, it holds dependable Wolverine copper tube!



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All-Electric Truck Refrigeration

Continuous Refrigeration Permits Delivery of Frozen Foods, Dairy Products, Meat In Dry Truck; Longer Runs, Larger Loads, Less Spoilage Ups Profits

DETROIT—To meet the need for a low-cost, compact, light-weight refrigeration unit for local and regional delivery of perishable items, dairy products, frozen foods, and meat, a new, 24-hr., all-electric truck refrigeration system has been developed by Allen Cooler engineers in cooperation with the General Electric Co.

This addition to the truck refrigeration field has resulted in substantial savings in maintenance costs, greater loads, longer delivery runs, and profit from greater production for operators of trucks having up to 600 cu. ft. of capacity, according to the company.

With local ordinances fixing delivery temperatures of dairy and meat products—in some localities at a maximum of 50° F.—constant refrigeration is essential.

National Dairy Assn. Tests

During recent summer-weather tests of the all-electric system conducted with the National Dairy Association, milk was loaded at approximately 40° and kept all day under actual delivery conditions at temperatures not above 45°—with outside temperatures as high as 100° F.

The all-electric refrigeration system which uses a minimum number of components, frees space needed for ice, gasoline cooler equipment, and hold-over plates. Space saved is used for greater pay-loads.

Constant refrigeration is said to extend delivery runs otherwise interrupted by ice or refueling stops, and for one operator, loss from spoilage and goods returned was cut to less than 1%, the company claims. At night, there's no need to unload undelivered milk or meat.

Doubles as Walk-In

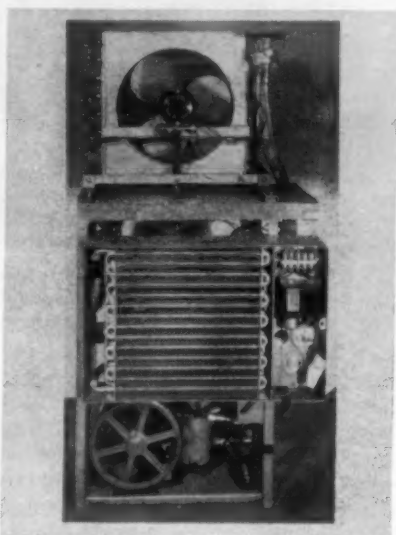
Plugged into a 110-115-volt a.c. outlet, the unit acts as a stationary walk-in refrigerator, providing low-cost storage space without additional equipment other than an extension cord.

"Sweating" is said to be practically eliminated. Body rust is reduced and sloppy floors are kept clean and dry.

Full Refrigeration at Engine Idle

The electrical system of Allen Cooler truck units is the result of a two-year development program carried on by the General Electric Co. It provides full refrigeration capacity at engine idle—particularly important for products delivered from house to house where continuous opening and closing of the refrigerated compartment door tends to raise the compartment's temperature.

Using a T-500 Allen Cooler unit with no product load at 110° F. ambient temperature, temperature is held constant at 38.1° F. in a 300-cu. ft. storage room with insulation 3 in. thick. Temperature



COMPLETE compressor-evaporator package of Allen Coolers for truck refrigeration can be corner-mounted inside the truck body. Access for standby plug-in is through a small door opening outside the truck. Unit requires 3 sq. ft. of floor space.

is constant at 35.1° F. under the same conditions, but with 4-in. insulation.

With the heavier T-750 Allen Cooler, under the same conditions, temperature is held, in a 600-cu. ft. room with 3-in. insulation, at 37.3° F., at 34.5° F. with 4-in. insulation. Hot gas defrosting is manually controlled in all cases.

G-E Electrical System Is Self-Contained

In addition to constant refrigeration, the system permits 110-115-volt a.c. standby with no additional components. Because the G-E electrical system is completely self-contained, truck refrigeration equipment utilizing it takes less room and weighs less—as much as 600 lbs. less than other systems.

The electrical system itself is made up of three major parts: an alternator, designed for automotive applications, which is belt-driven by the truck engine; a compressor

drive motor; and an evaporator fan motor of the type employed to run heater fans in heavy commercial vehicles and busses. Output of the alternator is regulated and rectified to maintain a constant 90 volts a.c.

Because the refrigeration unit's electrical system operates entirely independently of the truck's, no drain is placed on the truck battery. Only in starting is the truck's generator necessary, and then its load is less than one-half ampere.

Saved \$14,000 Per Year On Ice

Loss from returned and spoiled goods, and particularly cost of ice was a problem with one large mid-western dairy chain. Ice bills alone ran approximately \$3 a day for each truck. Installing Allen Cooler all-electric refrigeration units in 21 delivery trucks of the company's fleet has meant a savings of nearly \$14,000 a year for ice. Thousands of dollars annually

have also been saved with the reduction of spoilage and returns.

In another application only milk that could be delivered in three hours was loaded on a truck at Clupper's Pure Sealed Milk Co., Wabash, Ind. Refrigeration was from a small metal box holding 50 lbs. of ice. During summer months storage compartment temperatures seldom were below 70°.

Installation of an all-electric system cut expenses \$10.50 a week for one truck.

Constant refrigeration, even with the storage room door left open a large part of the time, extended each delivery trip by permitting filling the truck to capacity rather than with only enough pay load to last three hours. Milk cartons and the floor are dry.

Because the upright Allen Cooler installation requires a little over 3 sq. ft. of floor space and is supported off the truck floor, two cases can be stored under it.

NO TORCH!
NO TUBE CUTTER!
NO BRAZING!
NO SAWING!



ALCO design
saves you money
and time

you
service

"T" SERIES
ALCO THERMO VALVES

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For all temperature ranges—all operating conditions.
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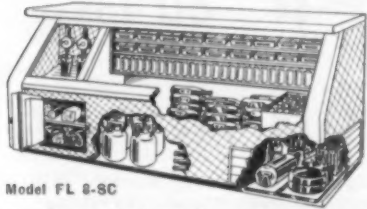
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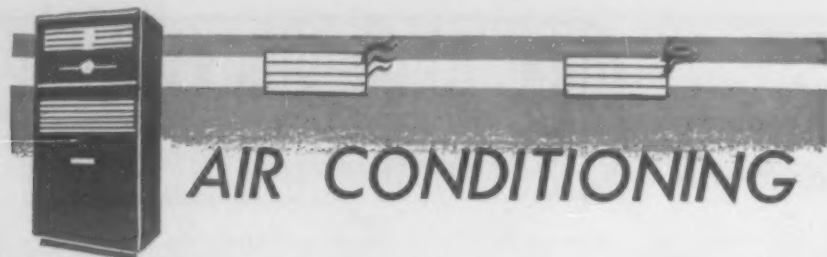
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Exclusive Franchise Available to Dealers



'Remington Incremental System of Conditioning' Combines Central Heat, Decentralized Cooling

PHILADELPHIA — Remington Corp.'s new method of air conditioning called the "Remington Incremental System of Air Conditioning for Multi-Room Buildings," which combines central heat with decentralized cooling, was described by Herbert L. Laube, Remington president, in a talk delivered here recently.

Laube explained that the system is called "Incremental" for two reasons.

"It can conveniently be installed in existing buildings in increments of one wing, one floor, or one suite at a time—at no additional cost as against doing the entire job at one time," he pointed out.

"Not only that, but in existing or new buildings it can be initially installed at a substantial saving in cost for all of the functions of air conditioning except summer cooling.

"Then, when an occupant wants cooling in his room or suite—and mutually acceptable economic arrangements have been completed—the cooling mechanism can be added in ten minutes."

SYSTEM CONSISTS OF ELEMENTS

Laube said the Incremental System "consists of four elements which are arranged so as to work together in complete harmony, namely:

"1. The central steam or hot water heating installation, you already have in your buildings, but with the present radiators removed.

"2. An adequate electrical system. In most cases this means extensive new wiring.

"3. A unique, new form of personal air conditioning unit which we call the Remington Consolaire

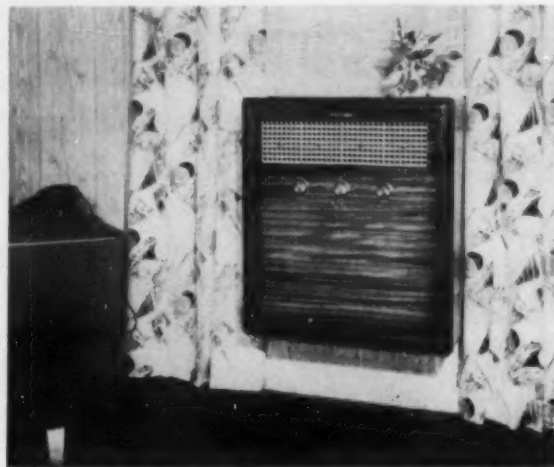
Conditioning Convector, designed for effective year-round use.

"4. An appropriate system of control which gives the room occupant complete and automatic control of his year-round indoor climate, yet prevents wasteful operation of each individual air conditioner when not required.

"The heart of the Incremental System is the Conditioning Convector. It is made in three physical forms. As presently developed, types H and L are principally for new construction. The third, or Consolaire type, is especially suited to existing buildings.

INSTALLATION DESCRIBED

"A Remington Incremental System is about to be installed here in Philadelphia, in the Market Street National Bank building. The Consolaire type of Conditioning Convectors will be used for this in-



"REMINGTON Incremental System of Air Conditioning for Multi-Room Buildings."

stallation. I believe that you may, therefore, be interested in a brief description of these units, and how they will be installed on this job.

"A typical floor of the Market Street National Bank building has 53 windows in the rentable area, and will have 30 Remington Consolaire Conditioning Convectors. They will be located under windows, and will replace existing radiators.

"These Conditioning Convectors are in the shape of an inverted capitol 'L' and will be hung from the window sills. Thus there will be no legs to interfere with floor cleaning.

"The accoridian type casement windows will be cut off at the bottom, and the bottom frames raised, so they can be opened as before. This will leave space under the shortened window for the projecting portion of the unit.

CONDITIONING CONVECTOR HAS 3 PARTS

"Each Conditioning Convector consists of three major parts: The base convector itself, which houses the heating coil, a centrifugal fan assembly, and the controls; a hermetically-sealed, interchangeable 'cooling chassis' of either ¾ or 1 hp., which slides in or out of the base convector about as easily as a drawer in a desk; and, the removable mahogany front which contains the adjustable discharge grilles and gives easy access to the entire mechanism.

"The left control knob is for adjusting the cooling and heating thermostat, while the right knob controls the ventilation. The center knob operates a four-position master control, for Off, Fan, Cool, and Heat.

"The controls are so designed that the cooling mechanism cannot function if the heating coil is hot. Nor will the heating control function if the coil is cold.

"Each unit is installed with the usual steam valve and trap.

"Good air conditioning practice requires more air to be circulated for cooling than for heating. Simple controls take care of this automatically, increasing the amount of air circulated by 50% when the unit is cooling.

LOW NOISE LEVEL CLAIMED

"When cooling and dehumidifying, the noise level of the Conditioning Convector is below that of the best room air conditioners. On heating it is even quieter and will normally not be heard.

"There will be an individual 230-volt circuit from the new electrical risers to reach each unit, ending in a receptacle to accommodate a 3-prong polarized plug.

"This system takes full advantage of the present heating pipes, without change, and requires no other piping. For instance, no drains are required for the water removed from the air during the cooling period. This water is used to increase the efficiency of the cooling mechanism, and is re-evaporated automatically into the outgoing condenser air.

"The main cabinet has no openings for air or controls at the sides or top. It is designed for recessed installation, where the building construction makes this practicable."

Laube said his company is convinced that the system "will give most owners, managers, and tenants of existing office buildings the desired result at the least cost."

INSTALLATION IN EXISTING BUILDING

"Now, let's see whether the Incremental System, in the case of an existing office building, does actually give the desired result," he said.

"Let's first consider the tenant—he pays the rent and he is going to pay for your air conditioning!"

(Earlier in his talk, Laube had said: "In just a few years time

(Concluded on next page)



There's no place like home

As a market for Fiberglas Dust-Stop Filters—so easy to sell with the Reminder Service Plan!

For sheer sustained growth, there's nothing like the home air conditioning market. The number of units installed in homes shoots up every day! You can see that getting a big share of the service business in your area spells P-R-O-F-I-T. The way to get it is to use the Reminder Service Plan to move Fiberglas® Dust-Stop® Air Filters. Based on a simple "tickler" file, it sells filters almost automatically—eliminates "nuisance" calls. Remember, not only do you profit from filter replacement sales—but you also pave the way to full service contracts and future unit sales.

Why Fiberglas Dust-Stop Filters? They're the leading original equipment filters, the most wanted replacement filters, too. Their unique construction permits depth penetration of dust, prevents surface loading. Dust-Stops assure customer satisfaction—bring in repeat sales. Go after the residential filter market—contact your Dust-Stop Filter distributor for details on the Reminder Service Plan.

TWO SALES FOR ONE CALL, when you sell Fiberglas Duct Insulation on every service or installation call you make. Comes in a complete line . . . rigid or flexible; faced, coated or uncoated for use inside or outside ducts. Unexcelled for thermal efficiency and sound absorption. Owens-Corning Fiberglas Corporation, Dept. 107F-20, Toledo 1, Ohio.

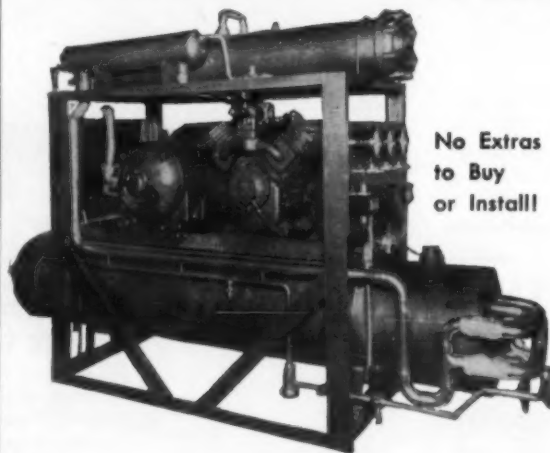
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Nationally known—nationally advertised in magazines, newspapers and on television, reaching owners of air conditioning equipment in the residential, commercial and industrial markets.

SCHNACKE Thermatrol WATER CHILLERS



No Extras
to Buy
or Install!

—completely
packaged
line . . .
10 through
60 tons!

Eliminate Costly Field Assembly!

All components in one low-cost single unit—motor, starter, full Freon charge, Thermatrol capacity regulator—everything! Thermatrol package chillers are available in sizes from 10 to 60 tons, at 35° and 40° in standard models. The "S" line offers specification design to meet any requirement, easily selected to fit the job. Ideal for multi-zone construction and year around systems. One order does the job! Write for engineering data.

SCHNACKE, INC.

1105 Governor St.

Evansville, Ind.

'Incremental Air Conditioning'--

(Concluded from preceding page) every square foot of Class A rentable office space in Philadelphia will be air conditioned, and the air conditioning that one tenant installs himself is rarely suitable for the next tenant.

"As long as you permit tenants to select and install their own air conditioning, and thus encourage air conditioning chaos, you are not going to make as big a return on your building investment as the profit you will make if you take the bull by the horns, settle on the right system of air conditioning for all your rentable floor space, and then own it yourself—even though the tenants pay for it.")

4-SEASON PERFORMANCE

"Let's see what the Incremental System gives the tenant during the four seasons of the year:

"A. I'll start with winter. In Philadelphia you need heating for 3½ to 4 times as many hours a year as you need cooling.

"The heat supplied by the Conditioning Convactor is under individual automatic control. The tenant does not have to open a window or close the radiator valve because he is overheated. He won't get a chill and possibly catch cold because, having turned off his radiator, he did not realize that his office was getting too cold.

"B. In summer, using the same thermostat, your tenant has individual automatic control of cooling and dehumidification. He gets the temperature he wants—not the temperature some operating engineer may think he should have. This makes for tenant satisfaction.

"C. And what about the neglected seasons—spring and fall? With Remington's Incremental System the lightly clad secretary can have all the heating she desires, while the robust, tweed enclosed executive in the adjoining office is being delightfully cooled.

"And, of course, with the Remington Incremental System, which filters both the room air and the ventilating air, the tenant re-

ceives air from which soot, dust, pollen, and germs have been removed, throughout the entire year. This protects his health and gives relief from hay fever or asthma."

OFF-HOUR AVAILABILITY

"But what about off-hour availability? In a multiple occupancy building, some tenants often desire to work not only in the daytime, but Sundays, in the evenings, and on holidays. Will those of you who have a large central refrigeration system in the basement turn it on in the evening, for one individual tenant?"

"With the new Remington system each tenant can have his cooling whenever he wants it, yet you can easily avoid wasteful operation of the equipment when his office is not occupied.

"What does the Remington Incremental System offer the building management firm?"

"As against year-round systems heretofore available, it gives the Rental Dept. maximum flexibility for future partition changes; it loses no rentable floor space; it is installed with minimum disturbance to existing tenants; the electrical input for summer cooling and year-round air circulation and filtering may be put either on the tenant's meter or the building's meter; and, the rental agent can sell tenant satisfaction for every hour of the day—every day of the year."

On the matter of first costs and operating costs, Laube said that the Incremental System would run considerably less than the cost of other types of year-round central systems, and only slightly more than that of cooling only by window air conditioners. It was pointed out that increased rental rates and increased tenancy will probably pay for any type of air conditioning system.

Laube pointed out that four years ago Remington employed George W. Meek, consulting engineer, to help its own engineers in the development of this system which, at that time, had already

been completely described and reduced to writing.

"Three years ago we had drawings of various forms of Conditioning Convectors completed," he said. "Over two years ago we were testing novel elements. Over a year ago finished units were on actual test and we have been testing these units, not only in the laboratory, but also in the field in a number of different cities," Laube said.

"This new Remington equipment is just now going into quantity production."

Neb. Starts Wiring For Capitol Cooling

LINCOLN, Neb.—A start on the proposed air conditioning of the State Capitol has been made by the State Legislature in appropriating \$78,000 for the 1955-57 biennium for the purpose of beginning rewiring to handle the electrical load of air conditioning.

Complete cost of such rewiring has been estimated at \$280,000 by State Engineer L. N. Ress.

Ress said a survey by an Omaha firm indicated wiring in the East Wing of the Statehouse, which was built first and now is 36 years old, is carrying two and one-half times the load originally intended.

The Omaha firm of Henningson, Durham & Richardson, Inc., consulting engineer, has been instructed to draft plans and specifications for the initial phases.

Greater Sales, More Competition, Pressure On Profit Margins Seen by G. A. Price

COLUMBUS, Ohio—A year of continuing high sales and rising new orders, accompanied by greatly intensified competition, was forecast recently for Westinghouse Electric Corp. by Gwilym A. Price, president, at the 69th annual meeting of the company's stockholders in Columbus.

In outlining Westinghouse prospects for 1955, Price reported that sales of major appliances to distributors thus far this year are up 12% over the corresponding period last year.

He said that the demand for major appliances has been so good that back-ordering has been made necessary in some models.

The meeting, which was held in the auditorium of the huge Westinghouse electric appliance division plant, was attended by more than 650 stockholders and guests who came from 18 states and the District of Columbia. A new record was set when approximately 78.9% of the company's capital stock was represented at the meeting in person or by proxy.

Price told the stockholders that budget forecasts of the company called for net sales billed approaching the record established in 1954, and that new orders received probably will exceed last year's mark by more than 10%.

At the same time, the Westinghouse president pointed out that competition has been greatly intensified in all phases of the company's operation, resulting in a "strong downward pull on prices."

"This is true in the consumer products field," Price said, "where a great many manufacturers are competing for a larger share of a vast market. But it is no less true, in varying degrees, for products manufactured for industrial, utility, and other uses."

Along with this pressure for lower prices, he said the basic costs of doing business continue to show an upward trend. Prices paid for materials used in manufacturing and the labor costs involved in producing them have increased steadily over the years, he reported, and "they show no signs of leveling off."

The result, he pointed out, is greatly increased pressure on profit margins.

As part of the morning session, stockholders were given a preview of new Westinghouse appliances which will be shown publicly in the near future.

A luncheon in the huge cafeteria and a tour of the 45-million-dollar plant followed the business meeting.

Years Ahead!



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We think ahead to keep you ahead of competition—to help you enjoy more sales and profits. Make the most of this. Write us: Mueller Climatrol, Dept. 165, 2056 West Oklahoma Avenue, Milwaukee 15, Wisconsin.

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The Suburban Line for competitive jobs, housing projects: gravity, counterflows, horizontal, highboys, lowboys.

A Commercial Line of unit heaters, boilers and packaged air conditioners in a wide range of sizes.

A Conversion Line of add-on cooling, conversion burners, incinerators, blower-filter units; a recessed summer conditioner.

A Cooling Line second to none. Air cooled and water cooled in wide range of sizes—deluxe units, packaged units, add-on units, self-contained and remote units.



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MAX SCHINKE,
Service manager,
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says

**ELIMINATES ROOM
AIR CONDITIONING
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DUE TO INADEQUATE
WIRING**

FOR SINGLE PHASE,
117 V, 60 CYCLE, AC
POWER LINES

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MR. SCHINKE also says that Admiral uses the new Simpson THERM-O-METER, Model 388, for all appliance temperature checks in the National Service Dept.

The -50° to +1000° F temperature range of Model 388 covers freezers, refrigeration, air conditioning, cooking ranges, stack temperatures, and ambient temperature rises of electrical components . . . all on one 7" scale.

Model 388 with 1 thermocouple probe . . . \$59.50
Model 388-3 Lead with 1 thermocouple probe . . . \$64.50
Additional probes . . . \$4.95



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line current-capacity tester
MODEL 397
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'Getting Through' To People Is a Two-Way Street

Perhaps the chief problem managers face today is that of communication—"getting through" to people. Management's ideas may be sound and carefully conceived. But they won't be acted upon unless they are understood and approved.

Plenty of good thinking has been applied to this problem. Advertising and promotional techniques are employed, with controversial effect. Employee publications can be immensely helpful. Meetings, too, if proper psychology is brought to bear upon the problem of communicating.

Let's study that last item for a moment. Take a sales meeting. Mr. Sales Manager knows what points he wants to put across. Furthermore, he probably states them ably, dramatically, and winningly—else he wouldn't be in his job.

Why, then, don't all his salesmen put these ideas into execution? Answer: they didn't "receive" them. They were thinking about something else at the time—their own specific problems, most likely.

Robert C. Hood, president of Ansul Chemical Co., believes the solution is *participation* by the salesmen. Before a sales meeting he queries all men in the field about their particular, individual problems. These are merged into the agenda. Thus every man keeps his ears pricked.

Mr. Hood believes that a successful manager should have these six skills, among others:

1. Technical ability to supervise the job.
2. Ability to plan his own work and that of others, as well as good judgment in forecasting.
3. Ability to define a problem, collect information on it,

They'll Do It Every Time . . . Jimmy Hatlo



pose and test alternate solutions, decide on a source of action, and evaluate that action.

4. Ability to train subordinates, and to supervise on-job training.

5. Ability to help subordinates improve their facility at solving business problems, and to help employees with their personal dilemmas.

6. Ability to "get through," and to test the adequacy of his firm's communications procedures.

"Today it is managements which are competitive rather than their products," Mr. Hood avers. "A top manager's job is to build an organization that can make decisions, rather than have an organization in which only the top manager is capable of making a decision."

Hood's ideas are given considerable weight by an American Management Association "task force" on communication procedures. This study group breaks down good communication into Observation, Awareness, and Willingness to Listen.

AMA points out: "the higher you get in management, the more dependent you are on accurate exchange of information."

"To communicate you have to be good at motivating people and measuring the results of your communication. Measurement means building-in a feed-back to follow up on results."

This is where your ability to "listen" counts. When you can understand what motivates people, you can put across your points in the lights of their emotions, biases, abilities, ambitions, etc.

Ask yourself: "What does this guy want that will help us get what WE want?"

All this is by way of saying that communication is a two-way street. It is perhaps the most important lesson an executive can learn as of this day.



Alamo Refrigeration Co.
San Antonio 12, Texas

Editor:

Your editorial "We Can't Build a Good Business on Dishonesty" in the March 21 issue of AIR CONDITIONING & REFRIGERATION NEWS not only was a splendid article but one that should be received with great enthusiasm throughout the air conditioning industry. We feel the results will be of tremendous value.

We are very pleased that you have reprints available and would like to have six hundred (600) copies. Please invoice us at our above address.

W. B. HARDIN

York Corp.
St. Louis 2, Mo.

Editor:

Thank you for your acknowledgement of my comments on "dishonest ratings."

One of the things that to me has caused much of this so-called misrepresentation has come out of the use of "1-ton 3/4-ton unit" in place of horsepower.

You can be sure that York Corp. will be a leader in endorsing publication of exact ratings.

C. C. STRAUCH

York Corp.
2201-11 Texas Ave.
Houston 1, Texas

Editor:

I have just received a copy of "Air Conditioning the Home" and I want to congratulate you.

With such a vast potential—and a mushroom growth as we have in the residential market we need all the assistance you can give us to coordinate our thinking. Your publications have long been active in trying to bring out the good in our industry, and I hope you will continue with periodic booklets of this type that will pull together current information on the residential air conditioning subject.

I find a tendency on the part of air conditioning people to think only in terms of the cooling and then have the heating of a residence as a secondary feature. The reverse is also true with the heating people. Why don't you push a program to emphasize the need for thinking in terms of good sound engineering and application for both cooling and heating?

Undoubtedly the word *air conditioning* should be changed to a better one that would be descriptive of both summer and winter operation to create comfort.

Again let me say congratulations for the job you are doing.

W. S. MILLER



Eliminate all water problems with
UNICON by KRAMER. Any size
compressor, regardless of tonnage,
can be air-cooled with UNICON.

KRAMER UNICON

Stands, hoods, and wind deflectors
are available for simplified
outside mounting
You need nothing else!

WRITE FOR BULLETIN U-210C

KRAMER TRENTON CO. • Trenton 5, N.J.

Current Literature

To obtain further information on the literature listed below, please refer to key number preceding listing. Please use the "Information Center" form on "What's New" page.

A-P Offers Enlarged Version of Valve Catalog

KEY NO. Q-630

MILWAUKEE—The A-P Controls Corp. announces a new and greatly enlarged version of its annual Condensed Refrigeration Valve Catalog.

Increased in size from 12 pages to 20 pages this new A-P catalog illustrates and describes the entire A-P line including new products.

The catalog is printed in two colors with many charts, selection data, capacity tables, much reference information, and sufficient information on each product to assist in the selection of proper sizes, types, and capacities.

Describe Heavy-Duty Temperature Controller

KEY NO. Q-631

ASHLAND, Mass.—Application ideas and complete performance specifications for a new remote bulb, adjustable temperature controller are described by Fenwal Inc.

The controller, available in two temperature ranges, 60° to 250° F. and 200° to 550° F., is said to be particularly suited to handling large electrical loads of up to 35 amps at 120 volts a.c. Available bulb sizes, capillary lengths, and various modifications are described.

Booklet Traces UsAirco History, Expansion

KEY NO. Q-632

MINNEAPOLIS—"This is UsAirco," a 12-page booklet describing the company's history, products, and manufacturing facilities, is announced by the United States Air Conditioning Corp. here.

The two-color pamphlet traces the company's expansion, progress and contributions to the industry since its founding in 1924 under the original name "Arctic Nu-Aire."

'Reco' Bulletin Illustrates Fans for Walk-In Coolers

KEY NO. Q-633

RIVER GROVE, Ill.—A new bulletin describing "Reco" fans for walk-in coolers has been issued recently by the Reynolds Electric Co. here.

Bulletin 249 describes and illustrates both rigid ceiling and fixture fans.

Bush Catalog Describes New Multizone Units

KEY NO. Q-634

W. HARTFORD, Conn.—Bush Mfg. Co. has issued a 12-page catalog covering the company's new line of "MZ" multizone units for simultaneous air conditioning of separate rooms or zones at desired temperatures.

Catalog contains specifications, selection and ordering information on complete units as well as direct expansion, steam, and water coils and all other components.

Worthington Residential Line Outlined in Bulletin

KEY NO. Q-635

HARRISON, N. J.—"Come on in . . . the weather's fine!" is the title of a new bulletin offered by Worthington Corp. which tells how the corporation's packaged residential air conditioning unit works and what advantages it offers the homeowner.

Illustrated throughout, the bulletin contains information about the modulated heat and removable cooling unit features of the compactly designed unit. A graphic drawing illustrates how unit cools in summer, heats in winter.

Also contained in the bulletin are tips for prospective homeowners which explain how planning for installation of air conditioning unit in new home can help minimize construction costs.

Carrier Describes Large Capacity Absorption Units

KEY NO. Q-636

SYRACUSE, N. Y.—Absorption refrigerating machines "which produce large-capacity cooling from steam, have no major parts, and use plain water as a refrigerant" are described in a new 36-page catalog prepared by Carrier Corp.

These machines produced in cooling capacities of 100 tons and up by Carrier are employed for air conditioning and for process refrigeration applications.

The catalog has been designed for use by laymen as well as technicians and consulting engineers.

"For example," the company said, "operation of the complex refrigeration cycle is explained in four simple steps. Important features of the absorption machine are illustrated by documented testimonials from prominent business and industrial users."

"Capacity ratings are listed in easy-to-read tables and physical characteristics for the line of 22 different models are shown in a double-page chart."

In addition, the brochure points out, these versatile machines, manufactured in models ranging from 100 to 700 tons capacity, can adjust automatically from maximum load down to zero capacity. In the event of overload, they will continue to operate, delivering more tons at a higher chilled water temperature and without harm to

the machine, Carrier said.

Included in the catalog is a comprehensive list of installations for comfort and industrial processing with representative photographs. Helpful engineering data includes illustrated nozzle arrangements for both internal coil and open type machines, pipe connection data with diagrams, plus sections on electric wiring and how the control system functions.

Loose-Leaf Arrangement Covers Morrison Blowers

KEY NO. Q-637

CLEVELAND—Morrison Products, Inc., manufacturer of blowers for the heating and air conditioning industry, has issued a new catalog of the loose-leaf, file-folder type, with one sheet (two pages) devoted to each blower.

The pages show the blowers, component parts, graphs, tables, and other information.

Descriptive Folders Issued On Cambridge Filters

KEY NO. Q-638

SYRACUSE, N. Y.—New descriptive folders on Cambridge "Aerosolve" and "Absolute" air filters has been released recently by the Cambridge Filter Corp. here.

The Aerosolve filter for commercial and industrial ventilating and air conditioning systems was just recently placed on the market, the company said.



Increase COOLING TOWER EFFICIENCY With ASPIR-JET

Aspir-Jet, the new spray nozzle, increases efficiency of cooling towers by increasing water break-up and improving water distribution. This is accomplished by the Aspir-Jet unique design which atomizes the water with as little as one-half pound nozzle pressure. Formed of butyrate plastic, Aspir-Jets last longer because they do not corrode. Thousands already in use are giving better cooling even with lower than normal pressures.

Available through Refrigeration and Air Conditioning Wholesalers. Manufacturers & Refrigeration Wholesalers: if you are not now using or stocking this outstanding new product, wire or write

THERMAL AGENCY

National Sales Agents
1515 DALLAS • HOUSTON, TEXAS

JUST ASK US!

For "easy-to-get" product information . . . use coupon on "What's New" page.

No. 1 industry favorite

PARAGON 300-MB time switch is right for 90% of all refrigeration defrosting jobs

No. 1 favorite? You bet! From the day the Paragon 300-MB switch was introduced, it has been the standard of the refrigeration industry — and its uses are growing daily. It's standard for hot gas or electric heat defrosting . . . it automatically controls fans, solenoid valves, compressor motors and other equipment. Install it, set it, then forget it.

Insist on famous Paragon top-quality construction necessary for heavy-duty service — vital to ending call-backs — a must for guaranteeing profits. Order from your Refrigeration Equipment Wholesaler or write Dept. 1687 for bulletin.

✓ PROVIDES DEFROST CYCLES from 15 to 120 minutes — 1 to 8 operations per day.

✓ LONGER SWITCH LIFE assured by heavy-duty, industrial type motor.

✓ SHOCK-PROOF TERMINAL BLOCK means faster, safer installation.

✓ AMPLE CAPACITY — 30 amps, 120/240 volts, single or double pole. Offers flexibility not found in any other control.

Also write for complete facts on these famous Paragon timers

Commercial Defroster

Dehumidifier Timer

7-Day Calendar Dial Time Switch

Fan Timers

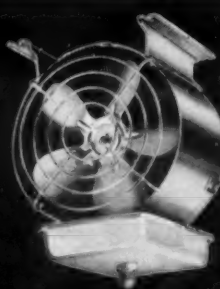
Paragon Electric Company

Two Rivers, Wisconsin

World's Foremost Manufacturer of Time Controls

PARAGON ELECTRIC COMPANY
TWO RIVERS, WISCONSIN

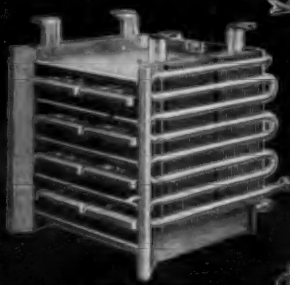
THE COMPLETE PEERLESS LINE FAMOUS FOR BUILT-IN SATISFACTION



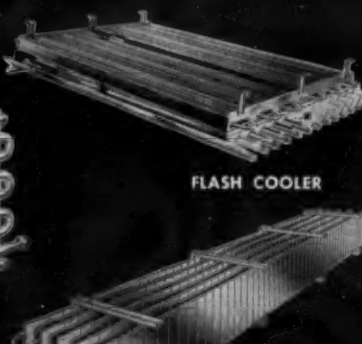
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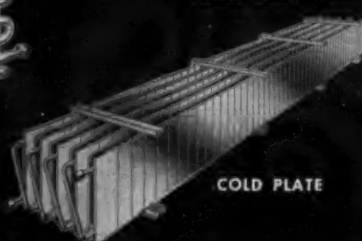
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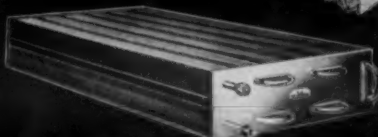
CUBE MAKER



FLASH COOLER



COLD PLATE



WALK-IN COOLER FIN COIL



HI-F AIR COOLED CONDENSER



HI-F CONCEAL-X AIR CONDITIONING UNIT



FIN COIL



HI-F AIR CONDITIONING COIL

In Peerless you not only satisfy your customers' needs in coils, but you also give the extra advantages found only in Peerless Products, the result of 43 years experience in manufacturing coils of all types and exclusive features of design and construction. These features mean continuous satisfaction year after year because of a constant B. T. U. capacity rate.

The manufacturer or contractor who specifies and uses Peerless builds business on the firm foundation of customer satisfaction. At no other time in history has industry shown such a marked preference for Peerless air conditioning and refrigeration coils.

May we have the privilege of sending you catalogs and price lists?

MANUFACTURERS NOTE: Send us blueprints of your evaporator and condenser requirements for quotation. Please indicate delivery requirements.

PEERLESS OF AMERICA, INC.

MANUFACTURERS OF REFRIGERATION AND AIR CONDITIONING COILS SINCE 1912

Dept. N. 5630 N. PULASKI ROAD, CHICAGO 30, ILL., U.S.A.

Proper Selection of Residential Equipment Depends on Several Variable Factors

Customers' Needs and Desires Should Be of Prime Importance; Selection Charts Designed for 'Residential Cooling Beginners' Show How This Can Be Achieved

By R. A. Gonzales, Director, Application Engineering,
Airtemp Division, Chrysler Corp.

The objective of equipment selection is to select equipment which, when properly operating, will satisfy the user.

It is readily understood that user satisfaction requires several other types of effort in addition to proper equipment selection. For example, correct representation in selling, delivery on time, proper installation methods, and prompt balancing and adjustment in addition to adequate operating instructions and good service—all of these are some of the many other components required to assure satisfied users. There is a wide appreciation of these other factors.

It is less universally appreciated that proper equipment selection should always have the customer in mind. The individual desires and needs of the customer are important in the making of a proper equipment selection for residences. The user wants comfort. The equipment should have the capacity to produce that comfort as well as it can be produced at the present time.

Problem of calculating the load and selecting equipment for residential air conditioning has been subject to various approaches. A chart method which endeavors to take all the variable factors into consideration is being used by Airtemp Div., Chrysler Corp.

These charts primarily "are intended as recommendations for organizations that are starting into the residential cooling field," points out R. A. Gonzalez of Airtemp in the accompanying article.

The thinking behind this method, and an explanation of the charts used will interest all contractors.

Now let's inspect just one of the several factors that make the selecting of equipment for residential use different from selecting equipment for commercial establishments.

Comfort Levels Vary

Reference is made to the amount of information that is available regarding the temperature that will provide acceptable results. When we are dealing with groups of people, we are dealing with averages and we can be reasonably sure that averages that have

worked out in the past will be repeated again in this new case.

Experience has shown that the average of groups of people are made comfortable by the production of a temperature in the 76° to 78° range when combined with a relative humidity proper to the climate (usually in the proximity of 50% r.h.). Colder temperatures will cause too many complaints and warmer temperatures will also increase the number of complaints.

Hence, when dealing with groups of people, it is an established fact that operating temperatures in the

76° to 78° F. range have proved satisfactory to the largest percentage of the people.

However, where only one or two individuals are the sole judge (or judges) of comfort, the problem is a different one. Tests on many people in normal health have established that at a relative humidity of 50%, some few people report maximum comfort at temperatures as low as 68° dry-bulb temperature. This represents one extreme. It has likewise been established that some few people find maximum comfort at temperatures as high as 83° (with the same 50% relative humidity).

The extremes just quoted are in the nature of 5% of the people tested. These considerations indicate the desirability of investigating the preferences of the purchaser in a much more searching way with reference to residential air conditioning than is required in the case of commercial air conditioning.

relative price range of the investment in the house.

With these thoughts in mind, we can catalog the market for residential air conditioning equipment into three categories:

1. Existing homes.
2. New homes being built for individual owners.
3. New homes being built by a builder for a sale at a later date to a purchaser.

Know Owners' Wants

The installer has several advantages in making an equipment selection for an existing home or for a home being constructed on order for a specific owner. He may, for example, consult with the owners regarding their preferences. The accompanying equipment selection tables have been made to assist in prompt equipment selection. A summary to assist in determining the owner's desires regarding capacity can be made up as follows:

	Indicates Line "B"	Indicates Line "C"
How large a group do they generally entertain at a time—	8 people or less	Groups larger than 8 people
Do owners think most air conditioned spaces are kept—	On the cold side	On the warm side
Owner's service preference as reflected by number of baths, number of refrigerators, horsepower of car driven, and similar indications—	Average	Higher than average

Now let's inspect another aspect of this cooling equipment problem. Our first thoughts lead us to expect a reasonable kinship between the equipment selection problems for heating and cooling. But here again we find with experience that we have to sharply revise our thinking.

Reverse Thinking Applies To Heating Problems

In heating, the problem is to select equipment that will have the capacity to heat the house in a vacant condition. When we have such capacity, we can satisfy the customer because when the house is being occupied, the internally generated heat will more than offset the door opening losses that will occur from the occupancy.

However, on the cooling cycle, everything that occurs as a result of occupancy adds to the cooling load. This is true of all the processes that accompany occupancy, from the door openings, the cooking, the shower bathing, the laundry, and the added heat from the people assembled for the bridge or garden club.

Vacant House Is No Basis For Estimating Needs

So while in heating, the ability to handle the vacant house is a good test, this same test is meaningless in cooling because it is neither the most severe case nor a reasonable average of the requirement. Perhaps by comparing both the heating and cooling functions to the other facilities in a home, we can arrive at a better understanding of the differences that are involved.

We can compare heating with the size of water line that serves the house. We want it to be adequate to the requirements and have no interest in capacity beyond that point. However, the amount of cooling capacity is more comparable to the size of electric refrigerators, the number of bathrooms, and some of the other services about the house that are not strictly a matter of "just one adequate size" but are more a matter of the owner's preference and the

A separate and very important phase of the installation that can be investigated at this point is owner's tolerance of noise. Along with owner's preference, consideration must be given to the surrounding external conditions. Normal city noises will readily mask sound levels that will be quite noticeable under the low sound intensity conditions of the country.

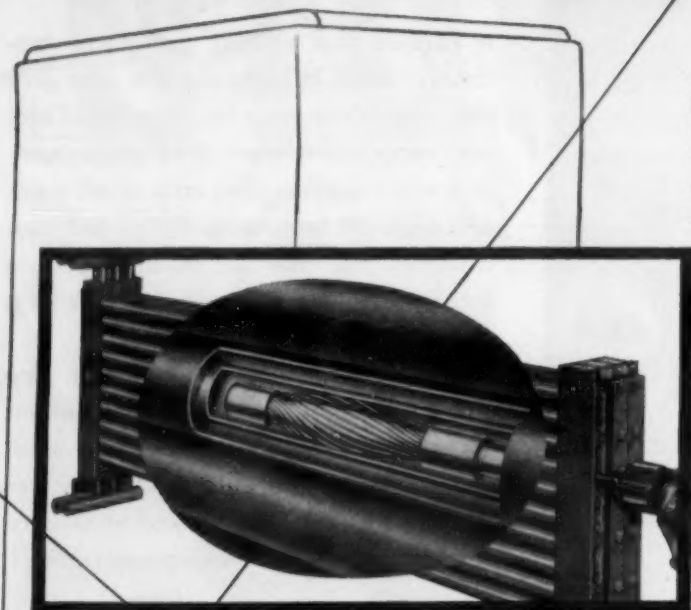
Sound insulation beyond the standard can be readily arranged for at a nominal cost where the indications are that such noise reduction will be desired.

Some additional items of important consideration in existing homes are:

1. Do present grilles have to be changed?
2. Does present fan have to be speeded up?
3. Does present fan motor have to be increased?
4. Is present electrical service adequate?

Equipment selection for builder homes is recommended from Lines "A" and "B" of the equipment
(Concluded on next page)

we protect the warranty because...
this Condenser is CLEANABLE



Opening a hermetically-sealed system to replace plugged condensers means voiding the warranty. But Halstead & Mitchell condensers are CLEANABLE without breaking into the refrigeration system.

CLEANABLE Condensers eliminate the danger of opening the sealed system to moisture and dirt... mean no expensive scrapping of the old condenser. Your serviceman, using a simple cleaning tool, can restore air conditioning or refrigeration condensers to new-unit efficiency in a matter of minutes. Meanwhile the hermetically-sealed refrigerant remains clean and dry.

Most manufacturers now insist on Halstead & Mitchell CLEANABLE Condensers. You'll find it economically sound to do the same!

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HALSTEAD & MITCHELL IS THE WORLD'S
LARGEST MANUFACTURER OF DOUBLE-TUBE
COUNTERFLOW CLEANABLE CONDENSERS

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AIR CONDITIONING AND GAS HEATING

Thoroughly experienced in original development of thermostatic and electro-mechanical control devices.

Familiarity with AGA, NEMA and UL Requirements desirable.

Permanent addition to present staff, civilian projects.

Send complete resume, salary expected, to

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**ROBERTSHAW-FULTON
CONTROLS COMPANY**
9020 Bellanca Avenue
Los Angeles 45, California

'1100' Guide Table for Equipment Selection

	INSIDE SHADES				OUTSIDE SHADING*			
	Ordinary Windows (Single Glass) 2 hp. 3 hp. 5 hp.		Double Glass or Storm Sash 2 hp. 3 hp. 5 hp.		Ordinary Windows (Single Glass) 2 hp. 3 hp. 5 hp.		Double Glass or Storm Sash 2 hp. 3 hp. 5 hp.	
Ordinary Walls								
Line "A" ...	625	1100	1920	690	1195	2050	730	1255
Line "B" ...	500	885	1535	550	955	1640	585	1005
Line "C" ...	440	775	1345	485	835	1435	510	880
Insulated Walls								
Line "A" ...	690	1195	2050	755	1295	2190	810	1370
Line "B" ...	550	955	1640	605	1035	1750	650	1095
Line "C" ...	485	840	1435	530	905	1535	565	960

'1200' Guide Table for Equipment Selection

	INSIDE SHADES				OUTSIDE SHADING*			
	Ordinary Windows (Single Glass) 2 hp. 3 hp. 5 hp.		Double Glass or Storm Sash 2 hp. 3 hp. 5 hp.		Ordinary Windows (Single Glass) 2 hp. 3 hp. 5 hp.		Double Glass or Storm Sash 2 hp. 3 hp. 5 hp.	
Ordinary Walls								
Line "A" ...	675	1200	2070	745	1305	2225	800	1380
Line "B" ...	540	960	1650	595	1050	1780	640	1100
Line "C" ...	470	840	1450	520	915	1560	560	965
Insulated Walls								
Line "A" ...	745	1305	2225	835	1430	2410	900	1515
Line "B" ...	595	1050	1780	670	1140	1920	720	1210
Line "C" ...	520	915	1560	585	1000	1690	630	1060

'1300' Guide Table for Equipment Selection

	INSIDE SHADES				OUTSIDE SHADING*			
	Ordinary Windows (Single Glass) 2 hp. 3 hp. 5 hp.		Double Glass or Storm Sash 2 hp. 3 hp. 5 hp.		Ordinary Windows (Single Glass) 2 hp. 3 hp. 5 hp.		Double Glass or Storm Sash 2 hp. 3 hp. 5 hp.	
Ordinary Walls								
Line "A" ...	765	1300	2290	830	1390	2430	875	1450
Line "B" ...	610	1040	1830	665	1110	1945	700	1160
Line "C" ...	535	910	1605	580	975	1700	610	1015
Insulated Walls								
Line "A" ...	830	1390	2430	905	1500	2580	950	1565
Line "B" ...	665	1110	1945	725	1200	2065	760	1250
Line "C" ...	580	975	1700	635	1050	1805	665	1095

'1400' Guide Table for Equipment Selection

	INSIDE SHADES				OUTSIDE SHADING*			
	Ordinary Windows (Single Glass) 2 hp. 3 hp. 5 hp.		Double Glass or Storm Sash 2 hp. 3 hp. 5 hp.		Ordinary Windows (Single Glass) 2 hp. 3 hp. 5 hp.		Double Glass or Storm Sash 2 hp. 3 hp. 5 hp.	
Ordinary Walls								
Line "A" ...	825	1400	2445	895	1490	2615	940	1570
Line "B" ...	660	1120	1960	715	1190	2100	750	1260
Line "C" ...	580	980	1710	630	1040	1830	660	1110
Insulated Walls								
Line "A" ...	895	1490	2615	980	1620	2800	1035	1700
Line "B" ...	715	1190	2100	785	1300	2240	830	1360
Line "C" ...	630	1040	1830	685	1130	1960	725	1190

'1500' Guide Table for Equipment Selection

	INSIDE SHADES				OUTSIDE SHADING*			
	Ordinary Windows (Single Glass) 2 hp. 3 hp. 5 hp.		Double Glass or Storm Sash 2 hp. 3 hp. 5 hp.		Ordinary Windows (Single Glass) 2 hp. 3 hp. 5 hp.		Double Glass or Storm Sash 2 hp. 3 hp. 5 hp.	
Ordinary Walls								
Line "A" ...	870	1500	2620	960	1620	2815	1025	1705
Line "B" ...	695	1200	2100	770	1300	2250	820	1365
Line "C" ...	610	1050	1835	670	1140	1970	715	1200
Insulated Walls								
Line "A" ...	960	1620	2815	1070	1760	3030	1135	1870
Line "B" ...	770	1300	2250	855	1410	2430	910	1500
Line "C" ...	670	1140	1970	750	1240	2120	795	1310

'1650' Guide Table for Equipment Selection

	INSIDE SHADES				OUTSIDE SHADING*			
	Ordinary Windows (Single Glass) 2 hp. 3 hp. 5 hp.		Double Glass or Storm Sash 2 hp. 3 hp. 5 hp.		Ordinary Windows (Single Glass) 2 hp. 3 hp. 5 hp.		Double Glass or Storm Sash 2 hp. 3 hp. 5 hp.	
Ordinary Walls								
Line "A" ...	960	1650	2890	1060	1800	3125	1150	1900
Line "B" ...	770	1320	2310	850	1400	2500	920	1520
Line "C" ...	670	1150	2020	740	1260	2190	805	1330
Insulated Walls								
Line "A" ...	1060	1800	3125	1200	1980	3400	1290	2100
Line "B" ...	850	1440	2500	960	1580	2720	1030	1680
Line "C" ...	740	1260	2190	840	1385	2380	905	1470

*Outside shading may be awnings, 18 in. or more of overhang, trees, or any protection that avoids direct sunlight on south windows and materially reduces sun on east and west windows.

How To Select Residential Equipment--

(Concluded from preceding page) charts. Line "A" is recommended for those cases of privately financed projects where the builder desires to buy the lowest cost air conditioning of the minimum capacity to match the low cost house being built in the price bracket corresponding to approximately \$10 per square foot of floor area on the 1953 basis.

Where the cost per square foot

runs appreciably above this "per square foot figure" the equipment selection from Line "B" is recommended.

In the case of equipment selections for FHA and VA purposes, the equipment selection must be submitted on the ARI method as reflected in ARI Standard 6-10. The methods and figures of Manual 11 of the National Warm Air are also accepted. Since the eventual data must be submitted for such cases to the FHA and VA requirements, it is urged that all equipment selection for such purposes be made from either the above mentioned ARI or Warm Air Methods.

The better selling and installing organizations improve their teamwork and proficiency as they accomplish more installations and accumulate experience. This improvement reflects in lower operating costs and improved results. The improved results not only reflect in money, but also reflect in

the size of equipment required to satisfy the customer.

Charts Recommended for Newcomers to Field

The experienced organization knows more about selling, installing, and starting equipment into proper operation. It has obtained valuable "know-how" in its line of work. Such an organization can make its own evaluation of the minimum equipment standards to which it chooses to work. The following selection charts are intended as recommendations for organizations that are starting into the residential cooling field.

It is also felt that the experienced organization will find these charts useful as they may make their own evaluation of the chart to use for their organization.

The attached set of guide tables take their identification from the firm number of square feet of floor area shown for a 3-hp. unit in the upper left portion of the guide table. For example, the "1100" guide table shows 1100 sq. ft. of floor area for the 3-hp. unit in the first figure located in the upper left of the table.

Table 1 shows the standard guide table recommendations for the various areas, depending on design conditions. For example, where the design conditions are 95° d.b. and 75° w.b. use the "1650" guide table for selecting water condensing equipment and the "1500" guide table for selecting air-cooled condensing equipment.

Table 1—Areas Determine Which Table To Use

Accepted Design Conditions	Recommended Table	Water Condensing	Air Cooled
90° d.b.; 70° w.b.	1650	1650	1650
95° d.b.; 70° w.b.	1650	1650	1650
95° d.b.; 75° w.b.	1500	1500	1500
95° d.b.; 78° w.b.	1500	1400	1400
95° d.b.; 80° w.b.	1400	1300	1300
100° d.b.; 75° w.b.	1500	1300	1300
100° d.b.; 78° w.b.	1400	1200	1200
100° d.b.; 80° w.b.	1300	1100	1100
105° d.b.; 75° w.b.	1300	1100	1100

The accompanying guide tables are intended for single story houses with 3 in. (or more) ceiling insulation and standard construction.

Cooling capacity of residential air conditioners is stated in the guide tables in square feet of house floor area. Use values in table for "Cool Floor" houses having basement, slab on the ground, or minimum-vented crawl space under the house. Reduce values in table by 10% for houses over well-vented crawl spaces.

The guide tables are for:

1. Single story houses.
2. Standard construction with normal amount of glass. (18% to 22% of total outside wall area.)
3. For residences only; not for houses used for restaurants or other purposes.
4. Houses with 18 in. or more overhang may be selected from "Outside Shading" section.

Use line "A" for: Builder homes in economy bracket of cost.

Use line "B" for: Existing

homes in higher bracket of cost.

Use line "C" for: Highest quality of existing homes and for higher cost custom-built homes.

External shading has been found essential to good cooling results in rooms having large sun glass exposures—both west and south sun glass areas particularly require such protection. Any glass area that exceeds 30 sq. ft. may be regarded as a large area.

Penn Boiler Licenses

Quiet May as Division

LANCASTER, Pa. — Licensing of Quiet May Burner as a division of Penn Boiler & Burner Mfg. Corp. here was announced recently by the latter firm.

A. Morrison, Jr., president of Penn Boiler, said marketing of the "Quiet May" and "Econ-O-May" line of burners, boilers, and furnaces has been transferred to Penn Boiler under a license arrangement.

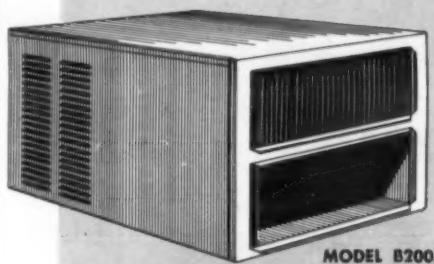
R. W. Peyton, Penn's assistant sales manager, will head up the Quiet May Div. with offices in the Lancaster plant. Present Quiet May field representatives, J. O. Miller and E. R. Schuelke, have been named district managers to service their present territories.

Quiet May oil burners and Econ-O-May lines of burners and other heating equipment have been manufactured by Penn Boiler for several years, with shipments originating at the Lancaster plant.

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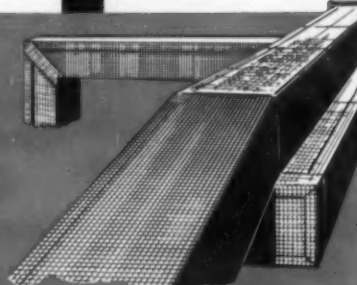
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MODEL B200A

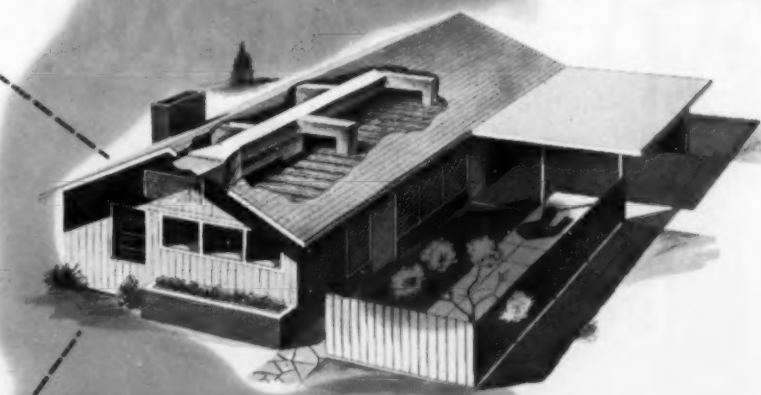
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Commercial Refrigeration

Longer Automatic Defrost Cycle Suggested By Taft If All Water Is Not Removed

DETROIT—An automatic defrost cycle, whether by hot gas or electric heater, must last long enough to drain the coil clean, Don Taft, service manager of McCray Refrigerator Co., Inc., told refrigeration servicemen here recently.

"If the cycle is not long enough to get all the water off the coil, lengthen the cycle rather than add another cycle," Taft advised members of the Michigan State Association of the Refrigeration Service Engineers Society.

ADDING CYCLE TENDS TO INCREASE PROBLEM

"Adding another cycle just compounds the fracture," he explained. "If the compressor starts and the coil is still damp, ice will form on the coil. During the next defrost period, the ice will slow defrosting so that even more slush will build up on the coil. Thus ice will continue to build up during the succeeding cycles, making the situation worse."

Taft pointed out that there are three major causes for excessive frost accumulation on coils in open-type self-service cases.

One is stacking the product so high that it interferes with air

circulation. Taft explained that in present day cases, the refrigerated air circulates from the coil in the rear across the top opening over the product and then down the front of the case, across the bottom, and up over the coil again.

If food is stacked too high, the cold air from the rear of the case is forced out of the cabinet. To replace the air lost, warm room air is sucked into the case and over the coil. This higher temperature air increases condensation.

The second cause of excessive frost accumulation is a draft across the case that will set up the same action as described above. Taft said that cigarette smoke blown into the case should lay there like a blanket. If the smoke moves across the case or forms a rippling pattern, there are drafts that should be eliminated if the case is to perform efficiently.

EXCESSIVE DRAFTS

"We find that excessive drafts in the store cause 90% of the excess frost on the coil," Taft declared.

The third source of trouble is unplugged tubing entrances to the case. If the opening where the lines

enter the case is not sealed tightly, Taft asserted, warm air will be drawn through the opening and give trouble.

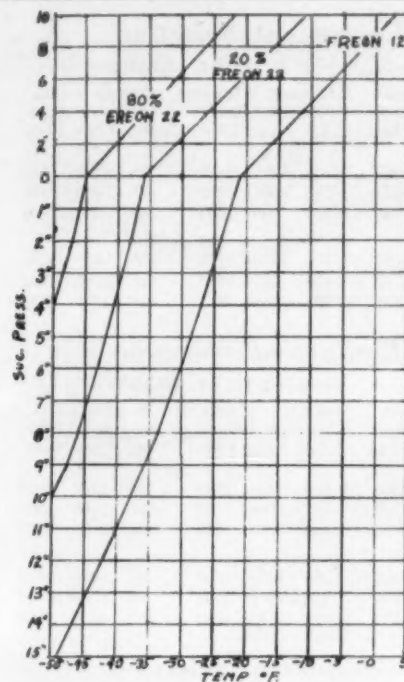
Because of these varied ways that warm air can get into the cabinet and cause widely fluctuating temperatures on the return air side, McCray puts its compressor cycling control at the coil rather than in the return air stream. There are bound to be more even temperatures at the coil, Taft reasons.

He said that McCray uses a hot gas defrost system on normal temperature cases and an electric defrost system on low temperature cases.

The hot gas defrost system employs a re-evaporator fed by a separate discharge line. It is controlled by a time initiated and temperature terminated control with the bulb at the coil.

Taft commented that if the temperature difference between room air and re-evaporator is large enough, the defrost system will never run out of heat and will evaporate every bit of the refrigerant in the coil.

But, he said, if the air temperature gets close to re-evaporator



TEMPERATURE-PRESSURE RELATIONS of various mixtures of "Freon-12" and "Freon-22" were plotted by Don Taft, service manager for McCray Refrigerator Co. based on his own experience in using them. He notes that the greatest increase in capacity over a straight "Freon-12" system is gained by adding 20% "Freon-22."

temperature, the gas will go to the condenser and receiver instead and lay there. Nothing will circulate through the coil.

Therefore, the room in which the cases are located should be heated at night, he suggested.

In McCray's electric defrost system, a fin strip heater is mounted ahead of the air circulating fan in the bottom of the case. When the unit shuts off for defrost, the heater is energized and the fan continues to operate.

The cycle is time initiated and pressure terminated when coil pressure reaches 45 lbs.

Taft noted that the fan is tilted so that the heated air blows directly onto the condensate pan from where it bounces up over the coil.

"The air off the heater is not hot," he observed, "but just warm. Until the coil is entirely cleared of ice, air temperature off the coil will be under 32° F. and for most of the cycle less than 10° F."

With ice cream cases, the comparatively warm air will tend to melt the top layer of ice cream, he noted. However, this can be avoided by putting a night cover directly over the ice cream cartons so that the air circulates above the cover.

MIXING 'F-12' AND 'F-22'

After completing his discussion of defrost systems, Taft commented briefly on McCray's experience with mixed "Freon-12" and "Freon-22."

"We used the mixture as a crutch," Taft explained, "to give us added capacity that we could not get with straight 'Freon-12' in a particular compressor. The compressor was not working at full load and we weren't getting the capacity we needed. So we added

some 'Freon-22.' It worked. The experience was entirely satisfactory.

MIXING COMPLICATES SERVICING

"However," he noted, "we don't want to do this because it complicates servicing. If we had some way of controlling the people who are going to service our equipment, it might be different. But we don't have any idea who will work on the case after it leaves the factory. So we want to keep the system simple with the fewest possible complications."

He declared that McCray's 1955 line uses "Freon-12" throughout. "We would rather stick to 'Freon-12' if possible," he commented.

Taft asserted that some machines operate on a vacuum. "Some people will frown on this," he admitted, "but we feel that it will not make any difference unless you get a leak in the system. If you get a leak, you've got a leak, whether the machine operates under pressure or at a vacuum."

ADDING 20% 'F-22' GIVES BIGGEST BOOST

Taft found that when mixing "Freon-12" and "Freon-22," the biggest increase in capacity over a straight "Freon-12" system occurs when 20% "Freon-22" is added.

Under calorimetric conditions, with the compressor running at 110° ambient and -30° evaporative temperature, a straight "Freon-12" system operated at 5.5 in. vacuum had a discharge pressure of 149 lbs., and had 7.9 B.t.u. per cu. ft. displacement on the compressor.

Adding 20% "Freon-22" brought suction pressure up to 2.3 lbs., raised the discharge pressure to 194 lbs., and produced 11.8 B.t.u. per cu. ft. displacement.

"This is a significant increase in capacity," Taft commented.

He warned that if you intend to add "Freon-22" to a system, "you must be sure that the compressor, at the highest expected suction pressure, will not be running too high over the name plate rating."

Trane Appoints Parker To Service Department

LA CROSSE, Wis.—The Trane Co. has announced the appointment of Thomas S. Parker to its Service Dept.

This appointment is in line with the company's policy of expanding its service organization to keep pace with rapidly increasing air conditioning and refrigeration sales, the company said. Before joining Trane, Parker had a number of years of experience with a major air conditioning firm as a field service engineer.

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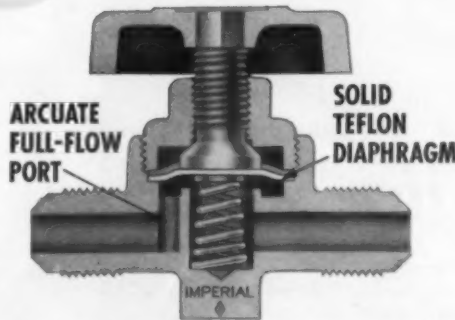
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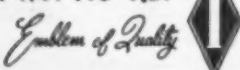


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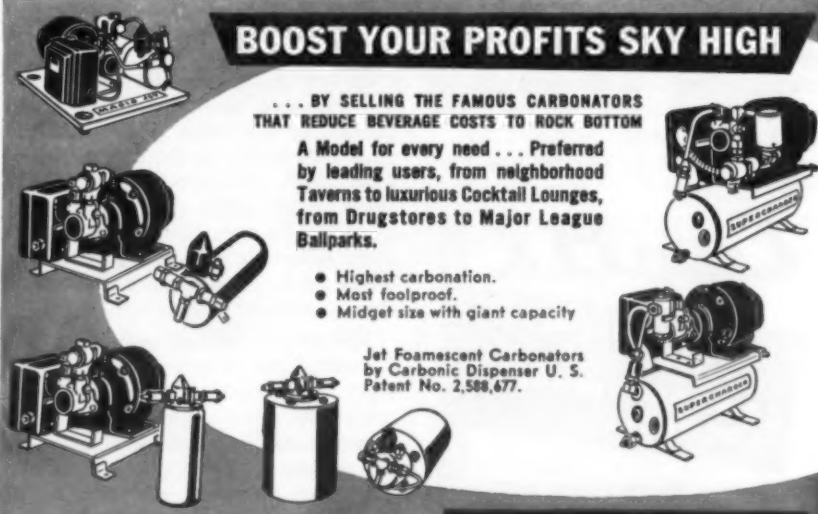
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Commercial Refrigeration

Setting the Record Straight

Buehler Didn't Say Ice Bank Cooling Always Best for Bulk Milk Coolers

CHICAGO—"Twisting" of his words so that he appears to favor ice bank cooling for bulk milk coolers on farms when he actually doesn't has prompted Leon Buehler, Jr., chief refrigerating engineer of Creamery Package Mfg. Co. here, to try to get the record straight.

"Quite emphatically, I do not agree that ice bank cooling is best" [for bulk milk coolers], Buehler says.

Buehler was moved to explain his views after the Vermont Electric Cooperative, Inc., of Johnson, Vt., published a reprint—without permission—of an article appearing in the Oct. 18, 1954, issue of AIR CONDITIONING & REFRIGERATION NEWS.

The News article reported a talk given by Buehler before the Western Michigan section of ASRE which was chiefly devoted to bulk milk coolers. He also commented in that talk "that a great many dairies used indirect chilled water systems for refrigeration," and that "with chilled water dairies can use ice accumulator systems, which several dairies are now doing," as was reported in the NEWS.

In its unauthorized reprint the Vermont cooperative singled out Buehler's comments about ice bank cooling for dairy processing, associated them with another individual's comments favoring the ice-bank principle for bulk storage tanks, and captioned both: "Experts agree—ice bank cooling is best."

"I think there is actually no question in your original report of my talk," Buehler told the NEWS, "that my remarks on ice bank cooling related to the dairy processing plant and not to the bulk milk cooler. Quite emphatically, I do not agree that ice bank cooling is best as they claim I do."

"Ice bank cooling has for many processing plant applications certain advantages, and to my mind, the principal advantage is it acts as a flywheel to handle what is frequently a very fluctuating load, and thereby gives a degree of flexibility to the operation that is not readily attainable by direct expansion systems," Buehler says.

"This consideration does not apply to the bulk milk cooler, for here we have a cycle that is substantially repeated day after day, of course with some variations but without the abrupt changes sometimes found in the processing plants," he continues.

"Actually, we find that the direct expansion bulk milk cooler under identical milk cooling load and ambient temperature conditions

takes only about two-thirds the kw. hours to cool 100 gals. of milk as does the ice bank type," Buehler contends.

"I have no desire to knock our competitor's products," he explains. "I am concerned that our own product be as good as we know how to build it, and be second to none from a viewpoint of simplicity, reliability, etc., and that we keep it that way."

"It is quite obvious that I consider direct expansion best for bulk milk coolers just as the air conditioning engineer, for example, generally considers direct expansion best for air conditioning, or the refrigerator engineer generally considers direct expansion best for the domestic refrigerator," Buehler states.

"I am sure that these engineers would agree without being at all inconsistent that there are certain applications for which the ice bank is well adapted so that when I advocated the use of the ice bank for particular applications I was certainly not endorsing its use for every purpose," Buehler says.

\$Million Warehouse and Processing Plant Set for Seafoods In Gloucester

GLOUCESTER, Mass.—Quincy Market Cold Storage and Warehouse Co. and the Gorton-Pew Fisheries Co. have recently joined forces to construct here what they claim will be the most modern refrigerated warehouse and seafood processing plant in the country.

More than \$1 million will be spent on the two-story concrete and masonry warehouse that will hold 12 million lbs. of frozen fish, the Quincy firm said. Located on the Gloucester waterfront, it will have deep water facilities for unloading ships from Canada, Iceland, and other countries.

In an agreement with Quincy, Gorton-Pew will construct a three-story connecting building to house a new Gorton frozen food plant for processing and quick freezing.

According to F. M. Bundy, Gorton president, the firm's engineering department has been working for six months developing improved processes and equipment for the production of cooked seafood specialties.

The plant is expected to be open by next January.

End of Milk Dating In N.Y. Seen Likely

SYRACUSE, N. Y.—Because current refrigeration methods make it safe to keep pasteurized milk in stores from five to seven days without spoilage, the New York State Agriculture Commissioner says his department will try to get rid of dating milk in New York City.

Daniel J. Carey made this disclosure at the annual meeting of the Eastern Milk Producers here. Dairy groups have asked that the dating requirement be abolished in view of modern refrigeration equipment.

Dairymen contend that removal of dating would result in savings to milk distributors that could be passed along to consumers.

Reid Is Chicago Zone Sales Mgr. for Sherer

MARSHALL, Mich.—Everett G. Reid, Jr. has been appointed Chicago zone sales manager for Sherer-Gillett Co. according to John S. Twist, vice president in charge of sales. The Chicago territory includes the entire state of Illinois and the southern half of Wisconsin.



Reid joined Sherer-Gillett in 1953 as a distributor, at the same time participating in a training program in preparation for his new position.

A graduate of Bowdoin college with a degree in economics, Reid worked for The Grand Union Co., chain store operator with headquarters at East Paterson, N. J., in the store training program and in the research department, according to the announcement.

He left the company to enter the good merchandising course at Michigan State university conducted under the sponsorship of food chain organizations for college graduates with food merchandising experience.

He graduated from the course with a Master of Arts degree and immediately became associated with Sherer-Gillett Co.

New Atlantic Div. A&P Warehouse To Process Meats Into 'Wholesale' Cuts

PHILADELPHIA—When A&P opens its new Atlantic division headquarters-warehouse this year, it reportedly will inaugurate a new meat-handling system under which carcasses will be processed into "wholesale" cuts for shipment to area markets.

The system is described as being between entire preparation of meat at the store and centralized pre-packaging. It does away with time-consuming "rough" work at the store and at the same time avoids disadvantages of centralized pre-

packaging. Also, stores are expected to realize substantial savings in storage space.

Under the system, it was said, carcasses will be processed in a large meat preparation room in the warehouse. They will be boned and reduced to "wholesale" cuts similar to those prepared by hotels and restaurant supply houses and then shipped to retail stores located in the area.

The cuts will require only minor trimming to consumer portions at the stores.

Sherer Offers Scholarship At Ferris Institute

MARSHALL, Mich.—Sherer-Gillett Co. has again announced to local high school seniors the offer of a two-year scholarship in refrigeration technology at Ferris Institute, Big Rapids, Mich.

The scholarship has a total cash value of \$1,200, with the added incentive of full-time employment for the summer vacation at the company's factory, plus the opportunity for employment for the student with the company following graduation.

Applicants are restricted to male graduates of the Marshall High school in accordance with an established procedure set up by the

company in conjunction with Ferris Institute.

John H. Coolidge, president of Sherer-Gillett, said the objective of the scholarship is to channel at least one high school graduate each year into the commercial refrigeration field.

Muller Is Atlas Plywood Pres.

BOSTON—Robert A. Muller, senior vice president, was elected president of Atlas Plywood Corp. at a meeting of the directors here recently. He has been with Atlas Plywood since 1927 and succeeds Elmore I. MacPhie, deceased.

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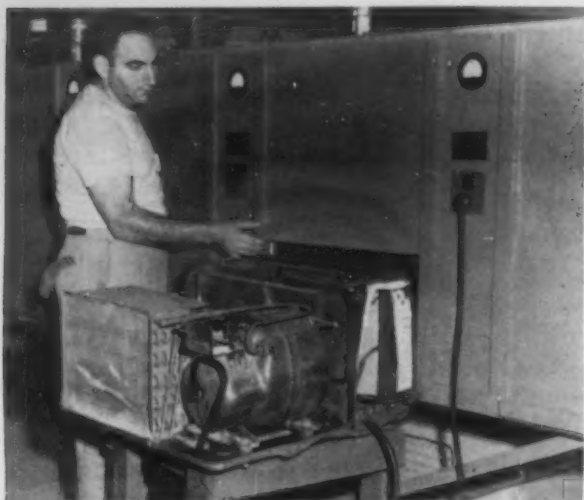


FIG. 12—Units get a run-in test at tunnel accommodating nine units. By adjusting sliding panels as Emanuel Pepitone is doing here, condenser fits neatly up against exhaust tunnel.



FIG. 13—Steam cleaning and paint touch-up if needed complete service operations on unit.



FIG. 14—In reoperating individual motor-compressor units, their efficiency is checked with an electronic flow meter.

Modern Hermetic Rebuilding Plant Helps Operator To Accomplish 'the Impossible' (3)

By C. Dale Mericle

After charging, the unit is ready for the final running test.

Final tests are made at a special stand (Fig. 12) that will accommodate nine units at a time. Stand, constructed largely of plywood, consists of a 30-in. square "tunnel" about 30 ft. long. Round ducts lead from the stand to outdoors. It is built at the height of the dollies.

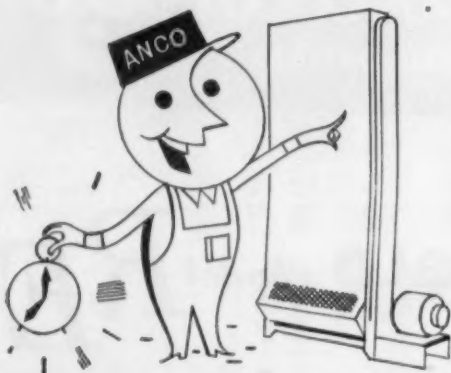
This is the final instalment of a three-part article describing a modern hermetic rebuilding plant and its operation. The plant reported on was built by James H. "Hans" White, a veteran in the field.

At regular intervals along one side of the stand are sliding doors,

one of which is adjusted vertically; the other moves horizontally.

Normally the doors are closed. When a unit, say a room air conditioner, is wheeled up to the stand for final test, a set of doors is opened. The unit is pushed into place (still on the dolly) with the condenser end against this opening. The doors are then closed, making a nice fit around this end of the unit.

Remove Scale from Condenser Tubes SAFELY with ANCO Cleaner



ANCO Condenser Cleaner removes scale and rust from condensers without injury to equipment. This exclusive formula, in dry form, is simply dissolved in the sump while the system is in operation. Within 2 to 15 hours, depending on the thickness of the scale, the tubes are clean and the condenser's efficiency restored. ANCO Condenser Cleaner is equally effective in evaporative condensers and those with separate cooling towers.



PROTECT CONDENSERS AGAINST RUST and SCALE with ANCO WATER TREATMENT

New or freshly-cleaned condensers should be protected against scale, rust and pitting with ANCO Cooling Water Treatment. It comes in convenient individual cans, ready to use. Just place the can in the condenser pan or tower basin where the contents gradually dissolve into the cooling water, keeping the system clean and operating at peak efficiency. Absolutely harmless to all metal parts.



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ANCO Algaecide removes algae and slime from cooling towers and condenser tubes without the necessity of shutting the system down for cleaning. ANCO Algaecide briquettes added at intervals to the sump will prevent algae and slime from forming. Although completely harmless to metals, ANCO Algaecide acts as a preservative in wood cooling towers.



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Visitors to Sealed Units plant who may have been wondering about the air conditioning and heating arrangements usually get an explanation from White at this point.

"All the air conditioning we may need in the shop during summer is supplied by the units under test," he explains. "With nine units running at the same time there is sufficient tonnage of air conditioning to cool the shop."

By the same token, heat for the plant can be supplied during colder weather (we hesitate to use the term "winter" because White is a member of the St. Petersburg Chamber of Commerce) simply by turning the units at the test stand around.

The evaporator is pushed up against the test stand intake so that cold air is exhausted out of doors. Heat from the condenser is blown into the room. In effect, then, the shop is heated by heat pumps.

Test Stands Have 115 and 230-Volt Outlets

Each of the nine stations at the final test stand has 115-volt and 230-volt outlets so designed to accept two or three-prong plugs. The receptacles are also 10 or 20 amps. There is also a separate ammeter for each station.

Although the test stand is designed primarily for room air conditioners, any sealed unit can be tested, White says.

"Other systems, such as freezers," he explains, "are hooked up to Autolite recording thermometers and recording cycle indicators."

Units are permitted to operate 40 minutes on the test stand to establish equilibrium conditions and then are checked for amperage draw and temperature difference. At this time amperage and t.d. are recorded on the back of the service tag attached to the unit.

"On room units where no defect has been found at the initial test stand, the units are run for 24 hours with a recording ammeter," White also explains. "This is to check for troubles that develop only after prolonged running time."

After a unit has finally passed all tests, the pinch-off is made with an Ideal electronic swedging tool, and the hermetic system is thus sealed once again. The Ideal swedging tool is a low voltage (six-volts), high wattage instrument.

Units Undergo 4 Leak Tests

A final leak test of the unit is then made by wheeling the dolly into the leak detecting room housing the G-E electronic leak detector. Purpose is primarily to check for a leak at the pinch-off although naturally any other leaks that might possibly have developed would show up at this point.

Incidentally, this means that units undergo four leak tests at the Sealed Units plant: the first immediately after the service diagnosis; the second at the repair station; the third during the dehydrating operation; and the fourth

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FIG. 15—This five-part tag (3 by 9 in.) has been evolved over the years by White to provide "a minimum of paper work with maximum control" of units in the shop.

in the G-E leak detector room following the final pinch-off.

After the final leak test, the unit is wheeled outdoors and steam-cleaned if necessary (Fig. 13) with the steam "Jenny" and given a paint touch-up, if necessary. Latter is done in the paint-spray booth where, it will be remembered, the units were cleaned immediately after they arrived.

Final operation is to recreate the unit and attach the shipping papers, which were made out when the unit first came in.

Crating and shipping screws are tightened with a power device, and the unit is now ready for loading on the truck. Using the same conveyor rack employed to unload the unit, one man can easily push the unit from the dolly onto the conveyor rack and up to the truck.

Replaced in-warranty parts, which through all these operations have been resting on the bottom shelf of the dolly, are crated and returned to the manufacturer for credit or replacement.

Other Plant Highlights

There are a number of other interesting facets to Sealed Units' operation.

In a separate section of the (Concluded on next page)



FIG. 16—Two parts of tag shown in Fig. 15 become 3 by 5-in. cards after job is completed and are filed for future reference.

Hermetic Rebuilding Plant--

(Concluded from preceding page) building is a complete machine shop, for example, equipped with lathes, drill presses, magnetic chuck grinder, hydraulic press, and electric welder to re-operate hermetic motor-compressors that are found defective.

Here also is located an electronic flow meter (Fig. 14) to check the efficiency of a powerhead. This instrument also permits the shop to simulate any length and bore of capillary tube for testing or experimental purposes.

Auto Air Conditioners Serviced In Special Section

A separate section of the shop has been specially set aside and equipped for the installation and servicing of automobile air conditioners, which service is done for distributors or manufacturers only, since White operates on a strictly wholesale, not retail, basis.

The automotive section of the plant has a complete set of automotive tools, and other special equipment needed for this purpose. White believes it is the first such independent operation of this type in Florida.

Vacuum lines run to this section from the main dehydrating system previously described. This permits dehydrating automobile air conditioners while still in the car.

Another feature of the plant, White points out, is that oil and cleaning fluid are kept in 50-gal. drums under low nitrogen pressure to prevent moisture contamination.

Climatic Test Room

White is also proud of the plant's climatic test room which he uses for experimental test work. Adjoining the large dehydrating room, it is so designed, in fact, that it can be used for dehydrating of larger equipment, such as packaged "store" air conditioners, that won't conveniently fit into the regular dehydrating room.

It can take packaged store coolers up to 10 hp. in size.

Divided into two sections, the

climatic test room is so designed that any combination of temperature and humidity can be maintained under controlled conditions for test purposes.

"It was especially designed," White reveals, "to test the efficiency of air conditioners and reverse cycle heat pumps. It is equipped with a special condenser defrost cycle and an evaporator fan limit switch."

Another section of the building is devoted to a large stock of replacement parts used in repair of sealed units plus a sizeable stock of complete replacement units and electrical components.

White has understandable pride in the building housing the plant, which he designed and whose construction he supervised directly. Built of concrete block, the structure, which has a 14-ft. ceiling, is fireproofed with asbestos.

As additional fire protection he has provided a separate 200-ft. well with a 5,000-gal. capacity.

Elaborate Wiring System

As might be guessed by now, the building has an elaborate wiring system. Florida Power Corp. supplies the company with four-wire network service, providing 115-volt, 208-volt, 230-volt single phase, and 230-volt three-phase current, permitting Sealed Units to test and repair just about any type of unit manufactured for service anywhere.

All employees of the company wear neat uniforms supplied by Sealed Units and also have the benefit of a shower. They and the customers also can take advantage of free soft drinks available from an automatic dispenser which White maintains beside the counter at the entrance.

Records and Controls

With a capacity of 36 units per shift, Sealed Units, Inc. necessarily must maintain close control over records and costs. A "greatly simplified" record-keeping and control system is used, however.

Heart of the record system, ac-



FIG. 17—In many organizations, even as large as Sealed Units, Inc., the wife of the owner has the important job of keeping books. Here "Hans" checks an invoice with Nettie White.

ording to White, is a special five-part tag (Fig. 15) which is wired to a unit at the receiving entrance when the unit is delivered to the company for repairs.

Numbered serially, the tag is provided with a carbon insert. Original section of the tag is perforated into two parts; carbon copy is in three parts.

Serial No. Is Invoice No.

Serial number of the tag not only serves as the control number for the unit while it is going through the shop but is also the invoice number for billing.

Original section of the tag has spaces to record all information necessary to keep track of the unit, including name and address



Service & Supplies

of sender, date received, name of carrier, freight charges, billing instructions, make, model, and serial number of unit, warranty status, complaint of user, dates repairs were completed and unit shipped, and how shipped.

Same information appears on the carbon copy.

This section of the tag (both original and carbon) is sized so that it becomes a 3 by 5-in. card when torn off.

Bottom section of the tag can be torn off and used as a claim check if the unit is brought in by a local dealer or distributor. If the unit is shipped in, however, the original claim check section is attached to the shipping crate when received, thus insuring that the unit goes back into the right crate when repairs are completed.

Carbon copy of the claim check section is torn off and clipped to a board in White's office to serve as a production follow-up record. White can tell at a glance just how many units are in process in the shop.

After the tag has been completely filled in when received, and the serial number of the tag marked on the unit with an electric scribe, the original 3 by 5

section is torn off and sent to the office for temporary filing.

As the unit goes through the shop, employees note on the back of the carbon copy of the 3 by 5 section of the tag the replacement parts installed, amount of refrigerant charge, and test results, including amperage rating as well as temperature difference obtained at completion of the repair work.

This section is then detached from the tag and sent to the office where it is matched up with the original section.

On the basis of this information the job is priced out and billed.

Records Kept for 5 Yrs.

Then the original copy of the 3 by 5 card is filed (Fig. 16) under the name of the customer while the carbon copy containing the detailed record is filed numerically. Both sets of cards are kept on file for five years.

"With this cross-reference filing system we can determine work done on units at a moment's notice," White says.

In general, White believes that this system, which has been evolved over several years, results in "a minimum of paper work with maximum control."

(The End)

Only "Kelvinator Cold" gives you ALL 3

Low Original Cost! Low Operating Cost! Low Temperature Equipment of Proven Dependability

① Low cost Dairy Case or Beverage Merchandiser
② Sliding-Lid Beverage Cooler (available with Lift-Lids)
③ Frozen Food Merchandisers for take-out foods
④ Water Coolers
⑤ Low cost Ice Cream Fountains
⑥ Space-Saving In-Line Design From 3 to 20 cu. ft.
⑦ Open-type Condensing Units
⑧ Sealed Condensing Units
⑨ Sealed Compressors

"Kelvinator Cold" means safe, dependable, economical refrigeration. "Kelvinator Cold" means low-temperature equipment built to the highest standard of quality by one manufacturer who has designed, engineered and built precision refrigeration equipment for 40 years. It means that you get more for your money, low-operating cost, low original cost and long, trouble-free service when you standardize on Kelvinator.

When your business depends on cold you can depend on

Kelvinator
Specialists in Refrigeration Since 1914

Write Kelvinator For Further Information

Commercial Dept., Kelvinator Div., Dept. AC-68, American Motors Corp.
14250 Plymouth Road, Detroit 32, Mich.

Gentlemen:
☐ Send complete product, pricing and financing data on these products numbered in your advertisement.
☐ Have your representative call.

Name.....Title.....

Company Name.....

Street Address.....

City.....Zone.....State.....

1. ☐ 2. ☐ 3. ☐
4. ☐ 5. ☐ 6. ☐
7. ☐ 8. ☐ 9. ☐

Grips the screw!

Drives it too!

Quick-Wedge

**SCREW-HOLDING
SCREWDRIVER**

2" to 14" blades, 4 bit sizes
Available with shockproof
plastic covered tubing
Unconditionally guaranteed

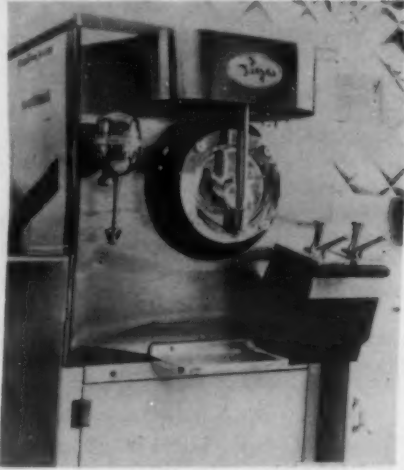
ASK FOR IT AT YOUR DEALER

Kedman Co., 233 So. 5th W., Salt Lake City

What's New

When requesting further information on new products, please use "Information Center" form.

Operation Simplified In New 'Frigidmixer'



KEY NO. E-630

SEATTLE—Because of the increased interest by restaurant and fountain operators in machine-made shakes, a major share of this year's production will be devoted to an improved version of the M1-190 "Frigidmixer," announces Sweden Freezer, manufacturer of soft-serve freezers, milk shake machines, and soft-serve soda fountains.

"The machine incorporates the latest engineering and design fea-

tures including removal of all switches from the front panel and the development of a new control system, which adds to the appearance of the machine and greatly simplifies operation," the company said.

"The few necessary controls have been housed in a small, stainless steel, removable box that plugs in like a radio tube and is located under a lift-up hood.

"They are out of the way of the dispenser who does not need to touch them during the day, as actual operation is done by an electrically-operated footswitch which opens the serving gate and also controls the feeding of fresh mix into the cylinder from the refrigerated mix tank to replace the product drawn. This system of control leaves the operator's hands free to hold two milk shake containers at one time."

"All model M1-190 Frigidmixers are factory-equipped with a heavy-duty Hamilton Beach mixer mounted on the front panel to further speed up preparation of milk shakes. With this 'hands-free' feature, the operator adds the desired flavor in the two milk shake con-

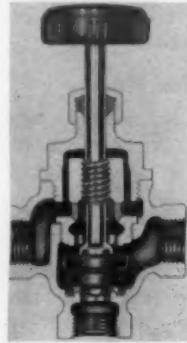
tainers, draws the shake base into one container and then holds it on the mixer for four or five seconds to blend in the flavor while she draws the product into the other container.

"Available as an accessory is a special flavor dispenser attachment for even faster malt and shake preparation. Easily mounted on the front panel of the Frigidmixer, the accessory consists of a stainless steel bracket and two flavor jars and pumps, including one heavy-duty chocolate, permitting the operator to do the entire shake preparation job right at the machine, and thus saving time-consuming steps and further reducing preparation time."

3-Way Valve Controls Room Unit Output

KEY NO. E-631

MANSFIELD, Ohio—A new three-way valve to control output of individual room units without overloading the pump was announced recently by Ohio Brass Co. It can be used on forced circulation central heating, and air conditioning systems or wherever water temperature or flow must be regulated.



Total flow can either be channeled through the unit, partially by-passed in predetermined amounts, or completely by-passed. Volume of flow does not change; therefore, there is no extra load on the pump motor, according to the company.

Valve body is cast in bronze alloy and has parallel, double-seat construction. It has one inlet and two controllable outlet ports. Valve is available in either 3/4 or 1/2-in. pipe size and can handle 300 lbs. of water pressure at 425° F., the company states.

Marine Plywood Towers Being Mass Produced

KEY NO. E-632

HOUSTON, Texas—Max R. Kerr, general manager of T O T Towers, Inc. here, has announced that the company's marine plywood "COW" Series cooling towers are now available on a mass production basis and are priced the same as its steel towers.

The COW (wood tower) Series towers are of the low head, gravity feed, induced draft type with marine plywood and redwood framework casing, nail-less redwood fill, and have centrifugal blowers, with bearings, belts, pulleys, and motors completely out of the wetted air stream, it was pointed out.

T O T said its successful experience with marine plywood since 1948 in many atmospheric tower basins has prompted it to give written guarantees of five years on plywood used in the atmospheric basins.



"Complete line, the perfect set-up for every need," says Clyde L. Copp (left), Typhoon dealer in Tulsa, shown with one of his customers.

TO GET ON THE MOST PROFITABLE FACTORY-DEALER TEAM IN THE BUSINESS, TIE UP WITH

TYPHOON 505 Carroll St.,
AIR CONDITIONING Brooklyn 15, N. Y.

*COMMERCIAL AIR CONDITIONERS, 2 TO 35 TONS
*RESIDENTIAL YEAR-ROUND UNITS FOR GAS OR OIL
*ROOM AIR CONDITIONERS, 1/2, 3/4, 1, 1 1/2 T.P.P.
*PACKAGED HEAT PUMPS, RESIDENTIAL & COMMERCIAL

Admiral Built-In Range Offers 5 Cooking Tops, 2 Ovens



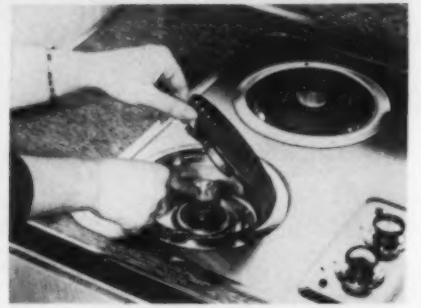
ELEVATOR BROILER rack in Admiral custom wall oven permits food to be raised or lowered without removing rack.

KEY NO. E-633

CHICAGO—A newly developed surface cooking unit on Admiral Corp.'s built-in electric range permits the homemaker to dial the exact temperature required for frying, stewing, boiling, or warming foods, the company claims.

The new type unit maintains heat automatically at desired temperature through twin thermostatic switches.

The range is offered with five



SURFACE UNITS are offered in five arrangements.

different cooking tops, three with two-element and two with four-element units. There are two choices of wall ovens, one with a picture window, the other with a standard door, the firm said.

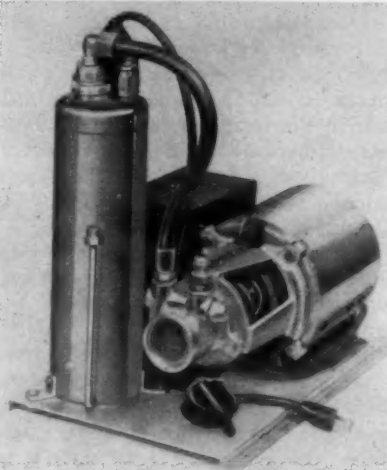
An automatic electric timer clock turns the oven on and off at a pre-selected time. An electric minute timer will time cooking periods up to 60 minutes.

Both wall ovens feature an elevator broiler rack which permits foods to be raised or lowered at the touch of a lever.

Model ECO-130, with window in the oven door, has a pushbutton floodlight switch. Oven interior is illuminated at the touch of a button, permitting the homemaker to see inside without opening door.

New Carbonator Features Triple Jet Carbonization

KEY NO. E-634



DETROIT—A new "Triple-Jet" carbonator has been added to its line by Hudson Industries, Inc. here.

Featured is a motor driven pump unit that may be operated at peak performance even though water pressure is at a minimum, according to the company.

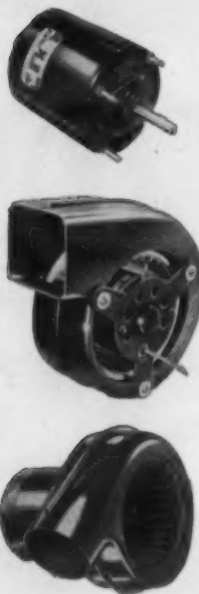
The carbonization cylinder contains a new type of upward, triple spray nozzle combined with the venturi principle, which the manufacturer states is a method of thoroughly saturating the water with CO₂ gas, and completely eliminates "still water."

Your appliances stay



...when they have dependable

Redmond MOTORS



There's no doubt about it. It takes quality and performance to keep a product sold. And dealers and distributors have learned through experience that appliances equipped with Redmond motors stay sold. That's because the long-life and trouble-free operation of these motors assures customer satisfaction, a most important factor in keeping the product... and the customer sold.

Redmond-equipped appliances offer customers the important benefits of 25 years of progressive electrical engineering and precision manufacturing in which 50,000,000 Redmond motors have been produced, setting a pattern of public acceptance based on dependable performance. Result: greater customer confidence, and a minimum of service calls. So, to assure customer satisfaction... look to Redmond, and keep customers looking your way.

The Standard of Dependability



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Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

What's New or Current Literature Available

Key No. Key No.
Key No. Key No.
Key No. Key No.
Key No. Key No.

Products Advertised
(list name, page, and issue date)

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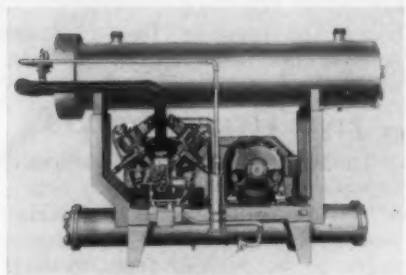
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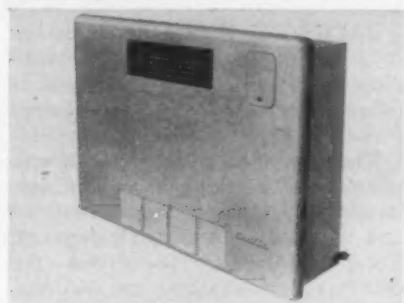
What's New (Con't)

New Liquid Chiller Line Ranges from 7½ to 100 Tons



KEY NO. E-635

ST. LOUIS—A new line of packaged liquid chillers ranging in size from 7½ to 100 tons has been developed by Curtis Refrigerating Machine Div. of Curtis Mfg. Co. The new Curtis units consist of



a multiple cylinder compressor, water-cooled shell-and-tube condenser, liquid chiller, all necessary controls, complete with electrical wiring, refrigerant piping, and expansion valves. Installation requires only setting and connection of water and electrical lines.

Consoles are provided by Curtis in a full range of sizes for hot and cold water year-round systems.



Filtrine
"Taste-Master"
PURIFIERS
for
WATER - COOLERS
ICE MAKERS
... rust, dirt
chlorine taste
... service
breakdowns
due to rust
& sludge
Stop

Insures service satisfaction for all coolers, ice-makers! Clear, taste-free water ... crystal ice ... every day ... in all locations.

FILTRINE MFG. COMPANY
53 LEXINGTON AVE. • B'KLYN 38, N. Y.

practically anywhere in the air supply system, using the existing ductwork to distribute the cool, dehumidified air to all parts of the structure, the company said.

The condensing unit is fabricated of heavy gauge steel. It consists of a 4-row copper tubing condenser coil; gas-cooled, hermetically-sealed motor compressor; welded steel receiver, equipped with safety pressure-relief; and a continuous-duty blower.

The cooling coil is flanged on both sides to speed connection to ductwork. Coils for both horizontal and vertical air flow applications are available.

Aluminized Pipe Jacketing Resists Fire, Acids, Water

KEY NO. E-637

NEW YORK CITY—Aluminized pipe jacketing which is resistant to fire, acid, and water, has been developed by the textile division of United States Rubber Co.

Made of aluminum foil laminated onto vapor-proofed asbestos cloth, it can be used to cover pipe insulation in heating, piping, refrigeration, and air conditioning systems in electric utility and industrial plants and commercial and institutional buildings, the company said. Called "Asbestos" pipe insulation jacketing, it requires no painting.

The aluminized jacketing is easily cleaned and does not absorb odors. A square yard weighs 12 oz.

Thatcher Adds Air-Cooled Conditioners to Line

KEY NO. E-636

GARWOOD, N. J.—A new line of air-cooled air conditioners has just been added to the full series of commercial and residential water-cooled summer air conditioners by Thatcher Furnace Co.

Thatcher's air-cooled summer air conditioner includes a remote-located condensing unit that can be installed wherever air circulation can be maintained. A direct expansion cooling coil can be set

Electric Water Coolers Feature 'Triple-Effect' Chilling

KEY NO. E-638

NEW YORK CITY—Introducing its new line of electric water coolers, Cordley & Hayes announced here that most of its 1955 models are being made with "triple-effect" cooling systems.

As a result of this improvement, the company claims, capacities of individual models have been increased up to 30%.

Cordley also announced two other major improvements. They are dual hand and foot controls, and thermostatic protection for the storage system as well as thermostatic control of drinking water temperature.

Seven new models will be put out by Cordley this year. Five are air cooled and two water cooled. Capacities range from 5 to 27 g.p.h. "In the triple-effect cooling system," it was explained, "water is pre-cooled, flash cooled, and then chilled in storage. In the pre-cooling phase, incoming or tap water is chilled by the cold water that spills down the cooler's drain."

"Previous models had pre-cooling and storage cooling systems. However, the flash cooling phase is new."

An adjustable thermostat con-

trols the temperature of the drinking water.

It has a 7-point dial that is used to regulate temperatures over a 10° range. An extra pre-set and non-adjustable thermostat protects against mechanical failure that might cause freeze-up in the storage tank.

Foot and hand controls for operating the water valve work independently.

Both are mechanically operated. Consequently, it was noted, they are not affected by power failures.

The foot pedal is made of tubular stainless steel. The pushbutton hand control is made of brass and chrome plated.

General features found on all Cordley models include: 19 gauge electro-galvanized steel, phosphorized after forming; infrared baked "Hammerloid" neutral gray finish; recessed rust inhibited black base; front panel easily removed for access to interior, according to the company.

Also, sealed water cooling unit—vapor and verminproof; sealed refrigeration unit; sealed fan motor on all air-cooled models; "Freon-12" refrigerant; no lubrication required; "feather-touch" pushbutton; 18-8 stainless steel top.

Applicable models exceed Federal Government 15-minute draw requirements and 300% overload test, according to the manufacturer.

The most powerful sales-clincher ever devised



custom made for the
man who says...
"I can't afford
new refrigeration"

It's easy to convince your prospects they need new refrigeration... but it's another thing to sell them when they don't have the down payment and can't see how they can accumulate the monthly payments. That's where a METER-MATIC coin meter will step in and close the sale.

Your customer puts just a few quarters a day in the coin meter... right from the till the way he's accustomed to pay his other suppliers... and he's got his refrigeration, and you've got your customers. You can sell safely with no money down, except the installation charge.

METER-MATIC
COIN METER
REFRIGERATION SALES PLAN

GET THE COMPLETE STORY

- FULL DETAILS... Specifications, prices, etc.
- METER PLAN BROCHURE... to help you sell
- FREE SELF-MAILERS... for mailing to prospects

MAIL THIS COUPON NOW!

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Please send me Meter-Matic Sales Kit No. 65Rm. Be sure to include a free supply of 25 self-mailers for mailing to my prospects.

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THE LATEST DEVELOPMENT IN LOW TEMPERATURE REFRIGERATION



INSTALLATION: BILKER SUPERMARKET, CINCINNATI, OHIO

ELECTRIC Heat-Cel* AUTOMATIC DEFROST

- Heat for re-evaporation supplied by low wattage, long life electric heater.
- Positive, consistent, economical.
- Performs efficiently in any ambient, regardless of location or season.
- Independent of compressor operating time or type (air or water cooled).
- No special controls needed for winter-time operation.
- Patented DOLE VACUUM principle insures faster heat transfer for quicker defrosting. Convenient "plate" design allows flat-against-wall mounting.

Defrosting "Kit" includes Heat-Cel and Accessory Package containing all necessary controls

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"HEART OF THE SYSTEM"

* Approved by Underwriters Laboratories



Commercial Refrigeration

Develop Safe, Economical Ice Machine Cleaner; Helps Produce 'Colder Cubes'

BIRMINGHAM, Ala.—Chemical Solvent Co. reported recently that demand is increasing for its "CSCO" ice machine cleaner which it said is "opening new markets for ice producing equipment."

The company pointed out that the formula for the cleaner was originated over a year ago and has been "used universally without complaint."

About four years ago, the company recalled, the manufacturers of cube and flake ice machines had to limit their production because "bad" water could not be used successfully in the machines for making ice.

It was then that Chemical Solvent was asked by a national manufacturer to investigate and find methods for controlling bad water.

The firm's research division "found that water being the greatest solvent produced naturally can hold practically any substance in solution and suspension," it was explained. "It was also found that with temperatures lower than 35° or higher than 95°

F., water will cause impurities to precipitate and form accumulations of objectionable substances on freezing surfaces of the machines.

"These substances appear in most waters and also enter the water through the atmosphere. It was found necessary to clean these ice making machines as frequently as conditions would demand."

In seeking an answer to the problem, Chemical Solvent said, "the first consideration had to be given to the purity of the water out of which the ice is made. The second consideration was that the compound used for cleaning the machines had to be free from any poisonous or toxic materials.

"It was also found necessary to have material that would not damage or dissolve the metals out of which the machines are made. Also, the cleaner had to be composed of chemicals that would have no bad effect on the operators of the machine by causing noxious fumes or harsh reactions to the skin, eyes, or clothing."

After testing and discarding

various compounds, the new formula was originated. The company said this is "very safe to use" and is also economical.

When ice machines are cleaned with CSCO ice machine cleaner powder, the ice produced has more heat extracted from it and consequently lasts longer and gives a better cooling effect, according to the company. The ice is also free from bacteria and other deleterious material, the company said.

File Resolution To Protect Open Air Market Displays From Contamination

BUFFALO — Possibility of expanded use of refrigerated display equipment for produce in open air markets was seen as a result of a resolution filed with the Erie County Board of Supervisors.

The resolution asked the board to direct the County Health Department to investigate open air market displays of fruits and vegetables on their stands.

Filed by Supervisor Bernard C. Kaitanowski, the resolution says the produce is displayed "with no thought of protection from the elements, dust, and bacteria."

Kaitanowski asks that the Health Department report its findings to the board, to determine whether legislation is needed to require storing and displaying the fruit and vegetables in sanitary display cases.

Booklet Lists Ice Maker Cost Savings

Mississippi Utility Spurs Campaign To Boost Commercial Sales; Sets Goal of 645 Calls

JACKSON, Miss.—A campaign to stimulate dealer sales of commercial refrigeration equipment is being conducted by Mississippi Power & Light Co.

The drive, in which special emphasis is being placed on ice-making equipment, began May 30 and will continue through June 24. Total minimum objectives for utility representatives are 645 customer calls and estimated annual revenue of \$6,450.

CONTACT MOST FOOD HANDLING CUSTOMERS

The objective of 645 calls "means that the majority of all food handling customers in our service area will be contacted personally and asked to consider the benefits they can obtain from modern commercial refrigeration equipment—which will be sold by the dealers in our areas," according to A. W. Hardin, assistant to the general sales manager.

"Also, 3,000 pieces of direct mail will remind them of these benefits."

"The objective of \$6,450 estimated annual revenue represents around 100 kw. of commercial refrigeration load added, and this represents quite a bit of refrigeration equipment."

Hardin recalled that the utility helped dealers sell 471 hp. of refrigeration equipment during Mississippi Power & Light's last commercial refrigeration program in 1953.

EMPHASIZE PROFIT ANGLE

A booklet prepared for utility personnel taking part in the current campaign points out that modern commercial electric refrigeration "is one of the most profitable services available to our customers."

Also, it is noted, "commercial electric refrigeration is important to us as a constant and dependable

source of revenue. In our area, commercial refrigeration has an unusually good load factor."

LISTS FIVE OBJECTIVES

The booklet lists five campaign objectives:

"1. We will work to familiarize our customers with all the advantages to be derived from modern commercial electric refrigeration equipment and to assist them in obtaining commercial refrigeration installations which will prove to be most efficient and profitable for them.

"2. We will want to get better acquainted with our commercial refrigeration dealers. Their cooperation is absolutely necessary for our customers and for our company to receive the full benefits of this important service.

"3. We will try to discover and eliminate as many cases of customer dissatisfaction with commercial electric refrigeration equipment as possible.

"4. We will provide, through these activities, more sales of modern equipment for our dealers, and increase revenue for our company.

"5. We will place special emphasis on ice-making equipment."

Utility representatives were told that all types of refrigeration equipment (except that used for comfort cooling) sold to commercial customers during the campaign period are eligible to be reported.

Three cash prizes will be awarded for ice-making machine sales, with all prizes contingent upon the attainment of company objectives.

In addition to weekly report forms, the campaign booklet includes an automatic ice cube maker cost saving analysis and a similar analysis for an automatic flake ice maker. They are as follows:

Typical Automatic Ice Cube Maker Cost Saving Analysis

Inlet Water Temperature °F.	60°	65°	70°	75°	80°
Kwh/100 lbs. Ice	5.2	5.5	5.9	6.3	6.5
Gallons Water/100 lbs. Ice	275	285	295	310	470

*Based on 15° rise through condenser, except 80° inlet water which is based on 10° range.

The figures above are based on a "York" machine, but should be fairly accurate for other makes.

Kwh/100 lbs. Ice—This value is the total kilowatt-hours required by the Ice Maker when supplied with the water temperature shown.

Gallons/100 lbs. Ice—This value is the total gallons of water required for both the ice-making and removal of heat from the condenser.

If your city water rate is based upon "cubic feet," multiply the number of gallons shown above by 0.134 to obtain the number of cubic feet required per 100 lbs. of ice.

1. Present Cost of Ice Cubes per 100 lbs. \$
2. Operating Cost of Ice Maker per 100 lbs.:
 - (a) Electricity Kwh x \$/Kwh = \$
 - (b) Water Gals. x \$/Gals. = \$
 - Total (a & b) = \$
3. Savings Per 100 lbs. Using Ice Maker (1-2) = \$
4. Annual Savings Using Ice Maker:
 - (a) Savings per ton = 20 x \$ savings/100 lbs. = \$
 - (b) \$ savings/ton x tons/year = \$
5. Automatic Ice Maker Will Pay For Itself in:

\$ Price installed ÷ \$ Annual Savings = years.

Typical Automatic Flake Ice Maker Cost Saving Analysis

Inlet Water Temperature °F.	60°	65°	70°	75°	80°
Kwh/Ton	50.7	54.8	59.7	65.3	71.4
Gallons/Ton*	4150	4200	4300	4450	4500

*Based on 15° rise through condenser.

The figures above are based on a "York" machine, but should be fairly accurate for other makes.

Kwh/Ton—This value is the total kilowatt-hours required by the Ice Maker when supplied with the water temperature shown.

Gallons/Ton—This value is the total gallons of water required for both the ice-making tank and the removal of heat from the condenser.

If your city water rate is based upon "cubic feet," multiply the number of gallons shown above by 0.134 to obtain the number of cubic feet required per ton (2,000 lbs.) of ice.

1. Present Cost of Flake Ice Per Ton \$
2. Operating Cost of Flake Ice Maker Per Ton:
 - (a) Electricity Kwh x \$/Kwh = \$
 - (b) Water Gals. x \$/Gal. = \$
 - Total (a & b) = \$
3. Savings Per Ton Using Ice Maker (1-2) = \$
4. Annual Savings Using Ice Maker:
 - (a) \$ Savings per Ton x Tons Used/Years = \$
5. Automatic Ice Maker Will Pay for Itself in:

\$ Price Installed ÷ \$ Savings/Year = Years.



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REVERE
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TUBE

SERVICING AUTOMOBILE AIR CONDITIONERS

BY C. DALE MERICLE

Editor's Note: The boom in automobile air conditioners can mean a new source of income for the independent refrigeration servicemen alert to the possibilities.

To help him capitalize on this development AIR CONDITIONING & REFRIGERATION NEWS has prepared a series of articles describing and giving service hints on numerous makes of such equipment. Not only will units of leading "independent" manufacturers be discussed in this series but those of virtually all automobile manufacturers as well.

The following instalment is the second in this timely new series.

A.R.A. (2)

A.R.A. Mfg. Co.
1041 Foch St.
Fort Worth 7, Texas

Charging System

With a "Freon-12" drum connected to the gauge manifold, start the car engine and set the throttle so that the engine runs at about 40 miles per hour.

Do not start the blower motors. If the weather is hot, place a fan in front of the radiator to prevent overheating of the engine while idling.

Approximately 5 lbs. of "Freon-12" is the charge for the smaller A.R.A. units; 6 lbs., for the larger. Charging should continue until frosting appears on the suction line near the compressor. Appearance of frost here generally indicates the system has taken on the correct charge of refrigerant.

Another check is to close the valve on the low pressure side of the gauge manifold and then listen to the thermostatic expansion valve. If it is quiet, there is enough refrigerant in the system. A hissing sound at the valve indicates a shortage, so additional refrigerant should be added.

When indications are that the system has the proper charge, both blower fans should be turned on "high."

Allow the system to operate for 15 to 20 minutes and then check the temperature of the air at the discharge grille with a thermometer. It should show approximately 40° F.

Normal operating pressures for the system are 18 to 20 p.s.i. on the low side and 170 to 200 p.s.i. on the high side with the car engine idling at 1,500 r.p.m.

TROUBLE CHART

High Head Pressure

High head pressure may be caused by:

1. Air in the system.
2. Overcharge of refrigerant.
3. Blocked air circulation over condenser.
4. Extremely high temperature of air passing through condenser.

Low Head Pressure

Low head pressure may result from:

1. Low back pressure setting on expansion valve.
2. Leaky flapper valve on compressor.
3. Leaky suction valves or loose pistons.
4. Shortage of refrigerant.
5. Split gasket between compressor cylinders.
6. By-pass valve not closing properly.

Shortage of Refrigerant

Shortage of refrigerant can be indicated by:

1. Hissing at thermostatic expansion valve.
2. Hot or warm liquid line.
3. High temperature in passenger compartment.
4. Low head pressure.
5. Very little or no frost on expansion valve and cooling coil.
6. Bubbles in sight glass.

Poor Cooling

Poor cooling can be caused by:

1. Shortage of refrigerant.
2. Improper location of thermostatic control bulb.
3. Back pressure setting on expansion valve not high enough to use maximum cooling coil surface.
4. Defective compressor valves.
5. Coil blocked by heavy coating of frost or ice.
6. Short cycling of discharge air into return air ducts.
7. Leaky thermostatic element on expansion valve.
8. Partially plugged screens or filters in drier or expansion valve.
9. Binding or leaky expansion valve needle caused by sludge.
10. Kinking or other obstruction in refrigerant lines.
11. Water in system freezing at expansion valve.
12. High head pressure.
13. Unreasonably high or low back pressure.
14. Excessive hot air entering car through openings.

Improper Expansion Valve Adjustment

In some cases it may be impossible to obtain correct adjustment of expansion valve due to:

1. Leaky needle in valve.
2. No charge in thermostatic bulb.

3. Ice or water in adjustment side of valve.

4. Binding needle or plunger in valve.

5. By-pass valve not closing properly.

Any obstruction in filters, screens, service valves, or other fittings in the lines may restrict refrigerant flow, causing excessive back pressure.

Under these conditions even if the valve adjustment is changed to a high pressure setting, the gauge reading on the low side will not change. If the valve is adjusted for lower pressure, the gauge may temporarily show lower pressure.

Valve Needle Stuck Open

This condition is indicated by:

1. Frosted or sweating suction lines.
2. Poor cooling.
3. High suction pressure.

These conditions may occur when ice forms in the adjustment side of the valve caused by collection of foreign material on the needle and seat.

It may be corrected by turning the adjustment nut all the way out (counter-clockwise), allowing refrigerant under pressure to flush out the foreign material. (Count the number of turns out on the adjustment nut so it can be reset to the same point.)

If repeating this doesn't release the needle, replace the valve.

Always install a new drier when replacing an expansion valve.

(To Be Continued)

Electric Compressor Clutch Cuts Gas Consumption And Maintenance for Automobile Air Conditioners

BELOIT, Wis.—A new electric compressor clutch designed to solve problems of automobile air conditioning was announced recently by Norman K. Anderson, general sales manager of the Warner Electric Brake & Clutch Co. here.

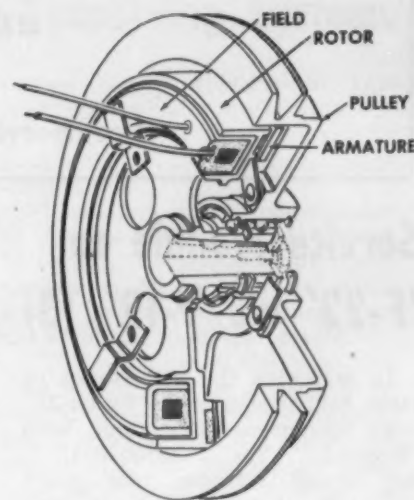
"The compressor clutch now makes it possible for motorists to start and stop the refrigerating compressor clutch on their car's air conditioning system by manual or thermostatic control," said Anderson.

He explained that when the clutch shuts off the compressor during the time the system is not needed it effects a saving of approximately 1 hp. per 10 m.p.h. With most current model cooling units, the compressor must remain running at all times, he said.

"Our tests have also shown that because the compressor can be shut down, at least one mile per gallon of gas for each 50 m.p.h. can be saved," the Warner executive revealed.

And because the new clutch reduces compressor action, the noise level is cut to a minimum.

There are two ways of controlling the clutch, Anderson remarked. First, a toggle switch mounted on the dashboard makes manual operation possible. The air conditioning system can be con-

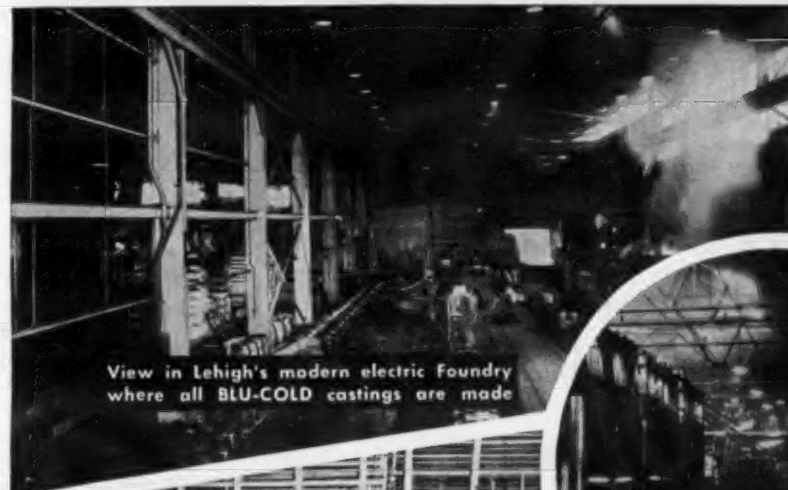


WARNER electric compressor clutch for auto air conditioning has only four parts.

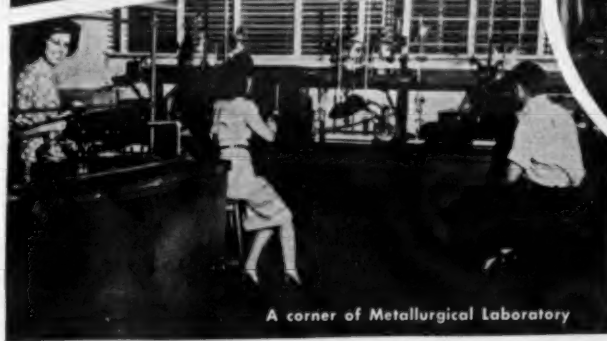
nected or disconnected when wired to the compressor clutch.

Second, the compressor clutch can be controlled by a thermostat. In this operation, the temperature inside the car determines when the system is to be cut in and out.

"A substantial gas saving and less maintenance will more than offset the nominal additional cost of installing the compressor clutch and easier winter starting will be possible because the engine will not have to turn over the compressor," Anderson said.



View in Lehigh's modern electric foundry where all BLU-COLD castings are made



A corner of Metallurgical Laboratory



West wing of Machine Shop



Normalizing ovens in Electric Foundry



Lehigh's Consistent Quality Starts With America's Finest Metal

Lehigh enjoys many manufacturing advantages that go to produce quality. Probably the most important of these is the ownership of one of the largest and most modern ALL-ELECTRIC foundries in the country. In this foundry, Lehigh produces its own grey iron castings for BLU-COLD crankcases, cylinders, valve plates, cylinder heads, eccentrics, pistons and end plates.

This grey iron is a premium metal rated as the finest in America by users in many industrial fields. Its superiority comes from melting in electric furnaces

which eliminate impurities and produce a uniform, close grained, non-porous metal which can be machined to tolerances of .0001 and will greatly outwear ordinary cast iron. All Lehigh castings are normalized (stress relieved), hardness controlled and checked critically at every point of production in Lehigh's metallurgical laboratories.

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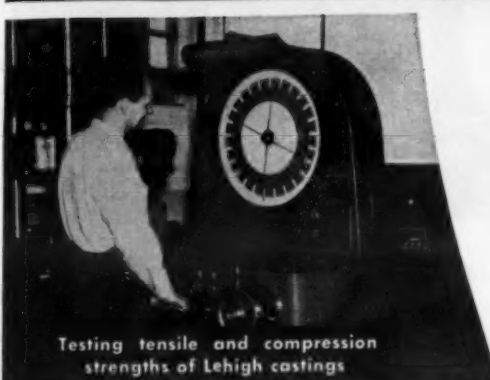
Lehigh BLU-COLD

CONDENSING UNITS AND SYSTEMS

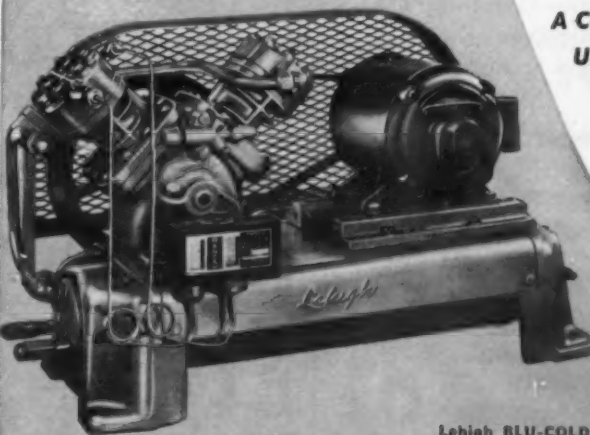
Lehigh Manufacturing Co., Lancaster, Pa.

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Refrigeration Problems

and their solution

by Paul Reed

For Service and Installation Engineers



Paul Reed

Service Trouble on 'F-22' vs. 'F-12' (3)

In reviewing the possibilities of more field trouble with "Freon-22" (or "Genetron-141") than with "Freon-12" (or "Genetron-12"), we should consider how much moisture each can absorb and hold, and what effect, if any, this will have on field service.

REFRIGERANTS ABSORB WATER

Fig. 1 shows two curves of the amount of moisture that can be absorbed by the two refrigerants, the upper curve being for "Freon-22" and the lower curve for "Freon-12." The figures on the bottom, horizontal line (known as the abscissa) are in degrees Fahrenheit of the liquid refrigerant.

The figures on the left-hand, vertical line (known as the ordinate) are in parts per million; that is, parts of moisture that one million parts of the refrigerant by weight will absorb.

If there is more than that much water in the refrigerant, it cannot be absorbed by the refrigerant, so therefore it must exist as free water.

Parts per million (abbreviated p.p.m.) is the term commonly used, but so many p.p.m. (20 p.p.m. for example) are the same as the number of millionths (20 millionths for example), and also the same as that many thousandths of one per cent (.0020% or .002% for example).

WATER CAPACITY OF 'FREON-12' VS. 'FREON-22'

In our example of 20 p.p.m. moisture content, if we are referring to 1 lb. of refrigerant, we would be talking about three ten-thousandths of 1 oz., or about $\frac{1}{40}$ of a drop of water in this pound of refrigerant. So we are talking about some very, very small amounts of water. Even the maximum amount of moisture shown in the curve (830 p.p.m.) is only about thirteen thousandths of 1 oz. or about $\frac{1}{2}$ drops of water per pound of refrigerant.

Now let's compare the relative moisture holding ability of the two refrigerants "Freon-12" and "Freon-22."

At -30° F., the temperature at which the evaporators of many open self-service frozen food cases operate, "Freon-12" can absorb 2½ p.p.m. moisture, while "Freon-22" can absorb 152 p.p.m., over 60 times as much.

At -10° F., the temperature at which the evaporators of many home freezers operate, "Freon-12" can absorb 5.7 p.p.m. moisture, while "Freon-22" can absorb 244 p.p.m., about 43 times as much.

At 10° F., the temperature at which the evaporators of many household refrigerators operate, "Freon-12" can absorb 11.8 p.p.m. moisture, while "Freon-22" can absorb 384 p.p.m., about 33 times as much.

At 25° F., the temperature at which finned blower coils operated on a self-defrosting cycle, used on many commercial applications, commonly operate, "Freon-12" can absorb 20 p.p.m. moisture, while "Freon-22" can absorb 520

p.p.m., about 26 times as much.

At 45° F., the temperature at which finned evaporators on air conditioning units commonly operate, "Freon-12" can absorb 38 p.p.m., while "Freon-22" can absorb 745 p.p.m., almost 20 times as much.

From these curves and these figures, we see several things:

1. At all temperatures, "Freon-22" can absorb many times more moisture per pound of refrigerant than "Freon-12."
2. The higher the temperature of either "Freon-12" or "Freon-22," the more moisture it can absorb.
3. The ratio of moisture that "Freon-22" can absorb, compared to the moisture that "Freon-12" at the same temperature, can absorb, rises as the temperature of the refrigerant does down; that is, comparatively, "Freon-22" gains on "Freon-12" in the per cent of moisture capacity, the colder the temperature, even though the actual amounts of moisture per pound of each refrigerant becomes less at the lower temperatures.

HOW DOES THIS AFFECT FREEZE-UP TROUBLE?

Now, what does this all mean to you in terms of relative field service trouble with the two refrigerants?

First, how about freeze-up at the expansion valves or capillary tubes?

The above figures are maximum amounts of moisture that the refrigerants will absorb and hold at the respective temperatures. If the refrigerants have more p.p.m. of moisture in them than shown by these curves, the excess moisture will not be absorbed by the refrigerant and will exist as free water. As long as the moisture content of the refrigerant stays under the p.p.m. shown by these curves, it will not freeze out in the tubes, provided, that the temperature of the refrigerant is no lower than that shown for the respective p.p.m.

'FREON-12' SYSTEM MUST BE VERY DRY

For example: a commercial system using a 25° F. evaporator. If "Freon-12" is used and it has a moisture content of 20 p.p.m. or less, there will be no freeze-up at the expansion valve. If, however, the "Freon-12" has a moisture content of 30 p.p.m., (corresponding to about 38°) the difference of 10 p.p.m. (30 - 20) will exist as free water which might freeze when the refrigerant from the warm liquid line goes through the expansion valve and is exposed to the 25° temperature.

If "Freon-22" were used, it could have a moisture content of as much as 520 p.p.m. and still not freeze at the expansion valve, so the "Freon-22" system can be much

"wetter" than the "Freon-12" system and still not have freeze-up trouble.

Kinetic Chemicals Div. of du Pont, manufacturer of "Freon-12" and "Freon-22," and General Chemicals Co., manufacturer of "Genetron-12" and "Genetron-141," guarantee that when they ship these refrigerants to you in factory filled cylinders, the refrigerant will not have a moisture content of greater than 10 p.p.m.

For "Freon-12" and "Genetron-12" this corresponds to a temperature of about 9° F. As long as the system into which you put the "Freon-12" or "Genetron-12" is perfectly dry, the evaporator temperature could go to as low as 9° F. without any danger of freeze-up of the expansion valve or capillary tube.

Probabilities are, that the evaporator temperature could be even lower than 9°, for some of the moisture would probably adhere to the inner walls of the tubing, etc. However, no freeze-up would occur at 9° F. or high as long as there was no additional moisture in the system to bring the moisture content of the refrigerant above 10 p.p.m.

LITTLE TROUBLE WITH FREEZE-UPS OF 'FREON-22' SYSTEMS

Ten p.p.m. moisture content for "Freon-22" or "Genetron-141" corresponds to less than -100° F., so if the system into which the new "Freon-22" or "Genetron-141" is put, is perfectly dry, it would run no risk of expansion valve or capillary tube freeze-up at any evaporator temperatures used in ordinary household or commercial refrigeration.

Or putting it another way, if new "Freon-22" or "Genetron-141" with a moisture content of 10 p.p.m. were put in a system with a 9° F. evaporator, that system could have a good deal of water in it—enough to bring the moisture content of the refrigerant up to about 375 p.p.m. before any freeze-up trouble could occur, and that would mean the addition of a lot of water.

Thus, freeze-ups of the expansion valves or capillary tubes on "Freon-22" or "Genetron-141" systems will not occur unless the system is very, very wet. If the same care is given to "Freon-22" or "Genetron-141" systems that is given to "Freon-12" or "Genetron-12," freeze-up should be very rare.

As a result of the relatively large amount of moisture that "Freon-22" or "Genetron-141" systems will hold without freeze-up trouble, manufacturers and field service engineers have grown careless about the moisture content of "Freon-22" and "Genetron-141" systems. Many, many of these systems are "reeking" wet, simply because they are not causing freeze-up trouble; therefore, little effort is being taken to reduce the moisture content.

If a system using "Freon-22" or "Genetron-141" experiences freeze-up trouble, the service engineer can be sure that that job is really wet. Nor need he be surprised if he has to use several large driers before he gets it dry enough to cure the freeze-up trouble, for he is going to have to take out at least

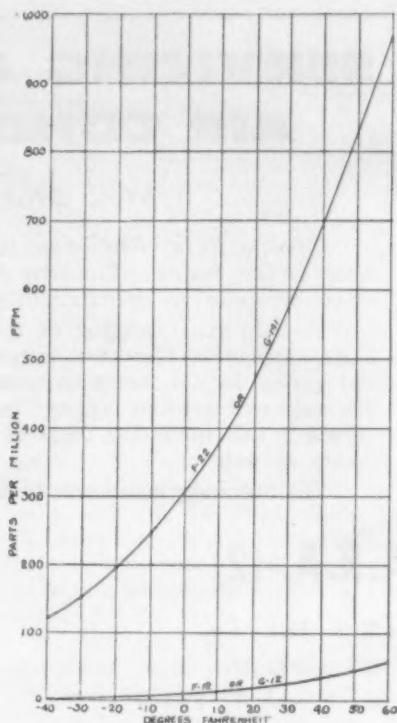


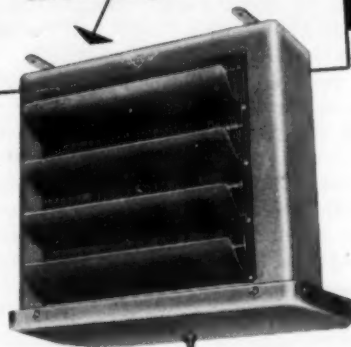
FIG. 1—Moisture curves.

several times as much water as from "Freon-12" systems.

But what about corrosion with all this extra moisture that can be present in a "Freon-22" or "Genetron-141" system? Is the corrosion going to be increased?

(To Be Continued)

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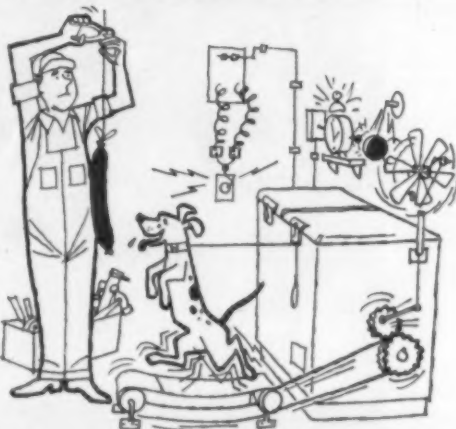
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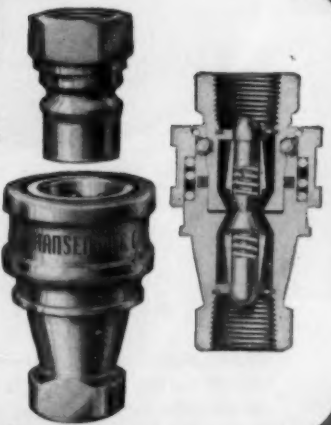
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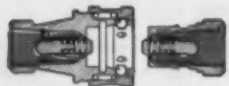
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REPRESENTATIVES IN PRINCIPAL CITIES

ASHAE Set for Frisco June 27--

(Concluded from Page 1, Col. 2)

tion from surfaces, and the like. Society business slated for the semiannual meeting involves presentation of by-law amendments on (1) a plan for membership grades and qualifications consistent with recommendations of the Engineers Council, (2) a regional director plan for chapter operations, (3) changing the Guide committee year to begin in November, and (4) eliminating need of publishing student applicants' name in the journal.

Complete program for the semiannual meeting is as follows:

SUNDAY, JUNE 26

9:30 a.m.—Council meeting, Room 220.

10 a.m.—Registration, Green Room.

3 p.m.—Welcome tea, Sacramento chapter, hosts.

MONDAY, JUNE 27

9 a.m.—Registration, Green room.

9:30 a.m.—First Technical Session, Italian room.

Call to order by President John E. Haines.

Welcome by Don McLeod, vice president, Golden Gate chapter.

"Electrical Analogue Prediction of the Thermal Behavior of an Inhabitable Enclosure," by Harry Buchberg.

"A Method for Determining Winter Design Temperatures," by M. K. Thomas.

"Periodic Heat Flow Through Flat Roofs," by D. J. Vild, M. L. Erickson, G. V. Parmelee, and A. N. Cerny.

12:30 p.m.—Welcome Luncheon, Colonial room, Toastmaster: C. E. Bentley. Speaker: Major General William F. Dean, U.S.A.

1 p.m.—Golf tournament, Olympic Country Club.

2 p.m.—Sight-seeing trip—scenic boat ride on San Francisco bay.

7 p.m.—"Forty-Niner" get-together party, Surf club at beach.

TUESDAY, JUNE 28

9 a.m.—Registration, Green room.

9:30 a.m.—Second Technical Session, Colonial room.

Call to order by Vice President John W. James.

"Ventilation of Commercial Laundries," by Sidney Marlow.

"Air Conditioning Coil Odors," by A. B. Hubbard, Nicholas Deininger, and Frederick Sullivan.

"A Rapid General Purpose Centrifuge Sedimentation Method for Measurement of Size Distribution of Small Particles, Part II—Procedures and Applications," by K. T. Whitby.

"Size Distribution and Concentration of Airborne Dust," by K. T. Whitby, A. B. Algren, and R. C. Jordan.

10:30 a.m.—Sight-seeing trip: Golden Gate bridge, Muir Woods.

6 p.m.—Informal dining at Fisherman's Wharf, International Settlement.

8:45 p.m.—San Francisco night club tour.

WEDNESDAY, JUNE 29

9 a.m.—Registration, Green room.

9:15 a.m.—Ladies continental breakfast, Mural room. Conducted tour of stores. Luncheon in Chinatown.

9:30 a.m.—Third Technical Session, Colonial room.

Call to order by Second Vice President P. B. Gordon.

"Sources of Vent Gas in Hot Water Heating Systems," by L. N. Montgomery and W. S. Harris.

"Psychrometric Analysis for Design of Forced Draft Cooling Towers," by S. E. Agnon and B. H. Spurlock, Jr.

"Resistance of Wooden Louvers to Fluid Flow," by C. W. Bevier.

"Performance and Evaluation of Room Air Distribution Systems," by Alfred Koestel and G. L. Tuve.

10 a.m.—Ladies and children sight-seeing and luncheon: Golden Gate park.

2 p.m.—Evaporative Cooling Symposium, W. T. Smith, chairman.

"Historical," R. M. Phillips.

"Air Cooling by Evaporation," S. F. Duncan.

"Evaporation From Surfaces," R. J. Petersen.

"Weather Data Limitations," Stuart Giles.

"Geographical Limitations," Robert Ash.

"System Design," Richard Hukill.

"Indirect Systems," D. T. Robbins.

"Water Treatment," R. M. Westcott.

Discussion period.

Report of committee on resolutions.

Unfinished business.

New business and adjournment.

6:30 p.m.—Social hour, Italian room.

7 p.m.—Semiannual Banquet, Colonial room.

Toastmaster: Dr. Baldwin Woods, past president ASHAE, vice president, University Extension, University of California.

Award of Golf Trophies.

Speaker: Dr. A. M. Zarem, manager, Southern California Div., Stanford Research Institute.

Subject: "Smog—A Challenge to Technology."

Washer Firms--

(Concluded from Page 1, Col. 3) the American Furniture Mart during the current summer markets in Chicago.

Press reports that Washer-Dryer "owned" the Bendix patents and "would acquire all of Bendix' present and future patents" brought a quick denial from Chester G. Gifford, president of Crosley and Bendix Home Appliances Div., Avco Mfg. Corp.

He stated, "We are advised that the Washer-Dryer Corp. is the assignee of certain license rights under Bendix home laundry patents in a commercial size washer, but that they have no right for machines of domestic size, do not own any Bendix patents, and have no basis for asserting such ownership."

"Full title to the Bendix patents is entirely in the successor of Bendix Home Appliances, Avco Mfg. Corp., which operates the Crosley and Bendix Home Appliances Div."

Engineer Offers Solution

Water Demand Should be Controlled By Prohibition of Non-Conserving Systems

ST. LOUIS—Among the considerations arising from air conditioning installations is the fact that they "can create demands on a water distribution system which will require excessive investments which otherwise would not be required."

So stated C. Kelsey Mathews, principal engineer of Burns & McDonnell, Kansas City, Mo., at the national convention of the American Society of Civil Engineers.

"The situation can be controlled by prohibition of non-conserving installations by ordinance," said Mathews. "It behooves the management of every water system to determine and check the status of air conditioning."

Mathews also said, in part: "Only in the past three or four years have water requirements of air conditioning units been recognized as being important. A great many cities are not yet impressed with its significance and very little authentic data is available."

"In the comparatively few cities which have observed the rapidly increasing demand for water for non-conserving units, usually something has been done about it, in the nature of prohibiting ordi-

nances or of changes in rate schedules which reflect the increased cost due to the extremely poor annual load factor for such installations.

"The effect of air conditioning is not generally realized," stated Mathews. "The effect of air conditioning on design of water distribution systems is different from the effect on treatment plants."

"The effect on distribution system design can be measured by comparison (1) of hourly demands ten years ago with present demands, (2) of ratios maximum hour to average day, and (3) of cost of improvements with and without non-conserved air conditioning."

"At Kansas City, Mo. these comparisons indicate excessive investment in distribution system if non-conserved air conditioning is not prohibited."

Mammoth Names Representative

ST. PAUL—The Mammoth Furnace Co. has announced the appointment of Bernard M. Packtor Co., New Haven, Conn., as its representative in Connecticut and Franklin, Hampshire, and Hampden counties in Massachusetts.

MORE FEATURES—MORE EFFICIENCY—MORE ECONOMY MORE PROFIT FOR YOU WITH THESE 2 NEW LA CROSSE PRODUCTS



Here's proof—not once—but twice—showing how La Crosse experience, engineering skill and refrigeration "know how" sweeps the field. The new KOOL 'KLOSET is already a sales leader in answering the demand for low cost extra refrigeration space. The SENIOR KUBE KING is added proof that practical design and low cost operation can automatically produce the cleanest, long lasting, cylindrical kubes possible.



NEW... KOOL 'KLOSET features

... the new La Crosse Self-contained refrigeration system, grey baked enamel exterior, 3" spun glass insulation, rugged hardware with inside release, 34" and 62" width. A walk-in, reach-in cabinet with countless uses... at a low, low price!



NEW... SENIOR KUBE KING features

... capacity of 3200 crystal clean kubes every 24 hours, 110 lb. stainless storage bin, uses only 6 quarts of water per freezing cycle, automatic start and stop of kube production. Avoid service headaches... easily removable stainless steel front panel, condensing unit pulls out for fast servicing.

LA CROSSE COOLER COMPANY

Factory and Gen'l Offices: 3000 Losey Blvd., So., La Crosse, Wis.
Export Office: 80 Broad St., New York City. Cable Address: Eximport

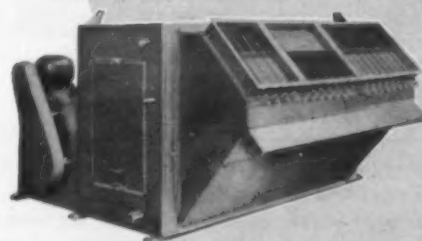
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having twins!



drayer-hanson's
A PROUD PAPA...

A downtown L. A. department store giant, Broadway-Hale, Inc., gearing for the zooming suburban market, is building two branch beauties, simultaneously — The Broadway Valley, The Broadway Anaheim. The twins are identical! Only thing that varies is the name.



PART OF THE
d-h TEAM!
FLEXAZONE

AND, both will be air conditioned for year-round comfort by Drayer-Hanson's popular heavy air-handling units —

Flexazone's and HH's. Over 521,000 cfm's in all! Look at the "extras"...

Electrically-welded angle-iron frame construction, vinyl-coated glass fibre insulation... and more. Details? Request bulletins C-4.20, C-4.22.A.

Architect: Walton Becker, FAIA, and Associates, Los Angeles;
Air Conditioning Contractors:
Valley, F. B. Gardner Co., Inc.,
Anaheim, Mehring & Hanson Co.



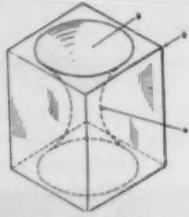
drayer-hanson
INCORPORATED

3301 MEDFORD STREET, LOS ANGELES 63, CALIFORNIA
(Subsidiary of National-U.S. Radiator Corporation)

PATENTS

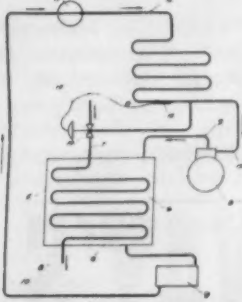
Week of March 15

2,703,964. ICE CUBE. Carlyle M. Ashley, Fayetteville, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Original application July 1, 1950, Serial No. 171,821. Divided and this application Aug. 2, 1952, Serial No. 302,367.



A transparent piece of ice having a pre-determined exterior contour and having an opening extending through the piece from one side thereof to the opposite side permitting access to the interior of the piece of a liquid to be cooled, the interior wall of the piece tapering inward from the opposite sides thereof to the approximate center of the piece so that, when viewed in section, the interior walls of the piece form oppositely opening parabolas.

2,703,965. CONTROL MEANS FOR MAINTAINING DESIGN PRESSURE UPON THE CAPILLARY TUBE OF A REFRIGERATION SYSTEM. Sam P. Shawhan, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware.



1. In a refrigeration system, the combination of a compressor, a liquid cooled condenser, a capillary, an evaporator and a suction line connecting the evaporator

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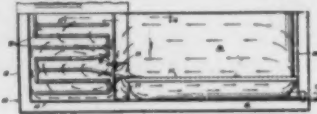
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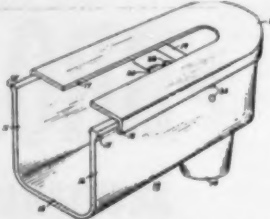
with the compressor, means to supply cooling liquid to the condenser, and control means to decrease the supply of cooling liquid to the condenser responsive to an increase in the amount of superheat in the suction line and to increase the supply of liquid to the condenser responsive to a decrease in the amount of superheat in the suction line.

2,703,966. COOLING AND STORAGE APPARATUS FOR LIQUIDS. Howard J. Snelson, Paris, Ill., assignor of one-eighth to Lyell Jennings and one-eighth to Joseph Pasaro, both of Paris, Ill.



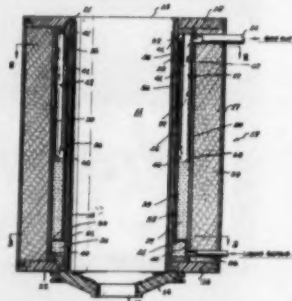
1. Liquid cooling and storing apparatus comprising an elongated cooler tank containing cooling fluid, a refrigeration coil received wholly within and of a size substantially filling one end portion of said cooler tank to refrigerate said cooling fluid, a storage tank received within the other end portion of said cooler tank, spaced longitudinally of said cooler tank from said refrigeration coil, extending over the major portion of the length of said cooler tank, and having side walls spaced slightly inwardly from corresponding walls of such other end portion of said cooler tank and a bottom disposed below at least the major portion of said refrigeration coil and adjacent to the bottom of said cooler tank, defining a narrow circulation space for cooling fluid unobstructed by refrigeration coil, impeller means adjacent the wall of said storage tank adjacent to said refrigeration coil, means driving said impeller means in a direction to propel cooling fluid from said refrigeration coil downward, and baffle means disposed for engagement by such cooling fluid propelled by said impeller means to induce such fluid to flow into the circulation space beneath said storage tank and thence upward through the circulation space between the side walls of the storage tank and cooler tank back to said impeller means.

2,703,967. COOLING AND HEAT INSULATING JACKET FOR DISPENSING FAUCETS. Robert L. Jester and Fred C. Wernentin, Fairfield, Iowa.



1. In combination with a continuous ice cream freezing machine having a horizontally extending discharge faucet, a heat insulating jacket substantially surrounding said faucet in spaced relationship thereto, said jacket comprising a U-shaped body portion open at one end and closed at the other end thereof, a slidable top cover plate for said body portion, a transverse support interconnecting the sides of said U-shaped body member for supporting said body member from said faucet, and means for adjusting the lengthwise position of said jacket relative to said faucet.

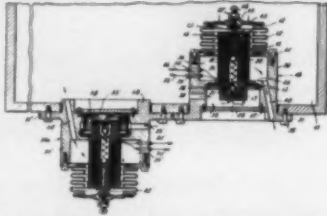
2,703,968. REFRIGERATING EVAPORATOR. Ernest E. Lindsey, Los Angeles, Calif.



1. In a refrigerating device of the liquid-gas expansion type, the combination of: walls providing an enclosed expansion chamber; an inlet conduit opening into said chamber; an outlet conduit opening into said chamber at an upper level; a dividing wall in said chamber arranged to provide two vertically extending compartments therein, the two compartments having connecting passages at their upper and lower ends, a first of said compartments being bounded in part

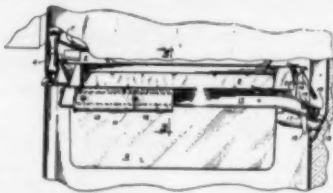
by the heat exchange wall of the expansion chamber, and the port of the outlet conduit leading from the second compartment; a vertically arranged baffle plate mounted in the second chamber opposite the upper connecting passage so as to present a vertical wall to substantially all the fluid flowing through said passage, the baffle plate extending downward below the upper level of the upper connecting passage; and a multiple apertured open-work baffle wall mounted directly below the baffle plate.

2,704,085. VALVES FOR LOW TEMPERATURE OPERATION. Jacob J. Bieger, Queens Village, N. Y., and Raymond H. Wadsworth, South Orange, N. J., assignors to Daco Machine & Tool Co., Brooklyn, N. Y., a partnership.



9. A valve assembly, which comprises a housing containing an inlet chamber and an outlet chamber, a frame member mounted within the housing to separate the chambers from each other and having a passage through it, the passage having a circumferential shoulder forming a seat, a movable gate element of magnetic material within the passage and engageable with the seat to close the passage and cut off communication between the chambers, means urging the gate element toward the seat, an electrical coil winding on the frame member encircling the passage, the magnetic center of the winding lying approximately within the gate element, when the latter is against the seat, and means extending into the passage and operable to engage and unseat the gate element.

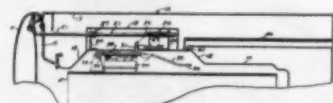
2,704,237. DRAWER INSTALLATION FOR REFRIGERATOR. Alfred E. Nave, Cincinnati, Ohio, assignor to Avco Mfg. Co., Cincinnati, Ohio, a corporation of Delaware.



1. In combination, a two door refrigerator including upper and lower access doors, a horizontal baffle within the refrigerator at the level of the adjacent edges of the doors, parallel brackets secured to and depending from the baffle, said brackets extending in a generally fore and aft direction in the refrigerator, a food storage drawer positioned between said brackets, a pair of guide rollers secured to the forward end of each of said brackets, each of said rollers including a thrust flange, said rollers extending toward said storage drawer, a pair of similarly formed guide rails of channel-shaped cross section secured one to each said of said drawer in guiding relationship with said rollers and thrust flanges, each guide rail including a straight section joined integrally with a downwardly curved section at its rear end, and a swingable bracket pivotally secured to the rear end of each guide rail, each swingable bracket including a lateral projection which can be swung into position opposite the end of its associated guide rail, said lateral projections engaging the rearmost guide rollers for limiting forward movement of said drawer whereby said drawer when extended from said refrigerator is downwardly inclined to facilitate accessibility.

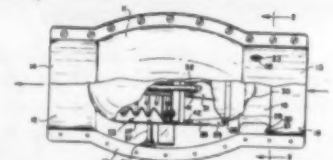
Week of March 22

2,704,441. AUTOMATIC DEFOSTING SYSTEM. Evans T. Morton, Galesburg, Ill., assignor to Admiral Corp., Chicago, Ill., a corporation of Delaware. Application March 11, 1953, Serial No. 341,751. 13 Claims. (Cl. 62-4.)



1. A refrigerator defrosting system for defrosting an evaporator in a refrigerator cabinet in response to a predetermined build-up of frost on the evaporator including a feeler for periodic engagement with the frost and means to artificially build-up said frost adjacent the feeler comprising a duct extending from a place closely adjacent the feeler and venting to the exterior of the cabinet.

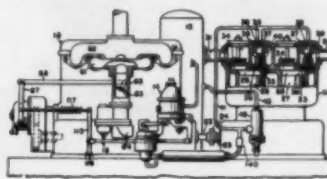
2,704,547. CONTROL APPARATUS. John R. Fox, Toronto, Ont., Can., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application April 5, 1951, Serial No. 219,371. 8 Claims. (Cl. 137-219.)



1. A valve for controlling air flow in high velocity air conditioning ducts comprising a flanged sheet metal body having sockets for receiving the ends of the ducts to which the valve may be connected, the body and sockets being constructed of a pair of essentially similar detachably connected flanged sheet metal stampings each having a generally semi-cylindrical shape with an enlarged central portion, guide means attached to at least one of the said stampings, a movable valve member guided by said means, a unitary seat ring adjustably attached to said stampings adjacent one of said sockets and arranged to coact with said

movable member for controlling flow through said valve, the attaching means for said valve seat ring comprising screws threaded into said ring and coacting with slots formed in said stampings, a gasket means between the flanges of said stampings, an outer groove in said valve seat ring, and a flexible O ring in said groove to effect a seal between said ring and said stampings and gasket means.

2,704,631. CONTROLLING DEVICE FOR COMPRESSORS. Paul A. Bancel, Montclair, N. J., assignor to Ingersoll-Rand Co., New York, N. Y., a corporation of New Jersey. Application Jan. 22, 1951, Serial No. 207,171. 10 Claims. (Cl. 230-3.)



1. A speed control device for a motor and a compressor driven thereby, comprising a speed governor operatively connected to said motor and acting in re-

sponse to variations in speed thereof for controlling the speed of the motor, a regulator connected to said governor and to the discharge of the compressor and acting responsively to variations in such discharge pressure for controlling the speed of the motor, a stop mechanism operatively associated with the regulator and acting in one position to limit the range of speed control of the regulator to a maximum rated speed of the motor, an accumulator connected to said stop to accumulate fluid compressed by said compressor, a conduit connected to supply such fluid to the accumulator, means for controlling the flow through said conduit and acting whenever the load demand on the compressor falls below a predetermined value to permit the flow of fluid to the accumulator, said stop being actuated into a second position by the regulator and pressure fluid from the accumulator to increase the control limit of the regulator to a value in excess of said maximum rated speed whenever the load demand on the compressor exceeds a predetermined value higher than the first said predetermined value, and means for releasing such accumulated fluid only when the stop is in the second said position.

(Continued on next page)

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POSITIONS WANTED

ATTENTION: REFRIGERATION equipment manufacturers—Refrigeration sales engineer with fourteen years' experience as wholesale sales engineer, store manager and sales manager wishes to represent manufacturers of refrigeration equipment in Indiana, southern Michigan and eastern Illinois. Reply to H. H. GRAY, R.R. #2, Box 129, Greenwood, Indiana.

MANUFACTURER'S REPRESENTATIVE: with several years' experience in refrigerated equipment, selling to distributors, chains and supermarkets interested especially in automatic defrost frozen food cases, slide door refrigerators and related lines. Territory covered at present, Illinois and Wisconsin. Contact L. A. POOLE, 406 Westminister, Lake Forest, Illinois (Chicago suburb).

ENGINEER: LOW temperature—environmental test equipment. 20 years' experience in the refrigeration and air conditioning industry. Have sales contracting and administrative experience. Familiar with production methods on commercial refrigeration and air conditioning. Research and development on reverse cycle. Will relocate. BOX A5268, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

AIR CONDITIONING engineer preferably with factory experience. Must know layout, installations, etc. on jobs up to 300 tons using multiple compressors. Manufacturer of equipment from 5 to 60 tons. Give complete information about education, experience, salary, etc. in first letter. SCHNACKE, INC. Evansville 7, Ind.

DESIGN ENGINEER with compressor, chiller and water tower experience, for manufacturer of equipment from 5 to 60 tons. Give complete information about education, experience and salary to SCHNACKE, Inc., Evansville 7, Ind.

DISTRICT MANAGER for Midwest—to headquarters in Chicago. Primary duty establishing new distributors and developing further sales through those already established. THE WARREN COMPANY, Box 1463, Atlanta 1, Georgia, established 1882, one of the country's leading commercial refrigerator manufacturers. Salary, incentive plan, expenses. Prefer experience in this field. State full background.

COMMERCIAL REFRIGERATION engineer—for position as assistant chief engineer with experience in design and development of commercial refrigerators—also thorough background in refrigeration applications. Write THE WARREN CO., INC., Box 1463, Atlanta 1, Georgia.

SALES MANAGER: Experienced in handling national promotion of agricultural or dairy equipment, or refrigeration equipment. Unusual opportunity for man with enthusiasm, intelligence and recognized sales managerial ability in a rapidly expanding business. Write BOX A5250, Air Conditioning & Refrigeration News.

MANUFACTURERS' AGENTS wanted by national manufacturer of complete line of freezers, room air conditioners, milk coolers, and allied equipment. Will pay higher than normal commissions. In New England States, Metropolitan New York, New York State, New Jersey, Pennsylvania, Vermont, Florida and adjacent states, North and South Dakota, Montana, Wyoming, Nebraska, Kansas, Arizona, New Mexico, Nevada. Reply to BOX A5258, Air Conditioning & Refrigeration News.

LABORATORY ENGINEER to test and develop finned-type heat transfer surfaces. Recent graduate, having studied refrigeration, thermodynamics, heating and ventilating preferred B.S.E.E. or B.S.M.E. Good opportunity with south central Michigan manufacturer. Send complete resume, stating salary expected. Reply BOX A5259, Air Conditioning & Refrigeration News.

OUTSTANDING OPPORTUNITY for experienced salesman—A large and well-known manufacturer of heating and air conditioning equipment has openings in its salaried sales organization for men to

cover territories in the Southwest, including Oklahoma and southern Missouri, Texas, Arizona and New Mexico. Men selected will have had experience in selling heating and air conditioning equipment at the trade level and will have a good technical knowledge of heating and cooling application, installation and service problems. These men will be interested in upgrading dealers to help them sell more and become better merchandisers. They will be 45 years or less, energetic and willing to work hard at building a good future for themselves. These men will be keenly interested in the many benefits available to them in joining this company. They will be paid a salary, expenses, and have opportunity to increase their income through a bonus plan. If you believe that you qualify for one of these openings and would like to "talk it over", submit a resume of your background, experience and salary expected. Your inquiry will be held in strictest confidence. Address your replies to BOX A5264, Air Conditioning & Refrigeration News.

FLORIDA DISTRIBUTOR wants service engineer with extensive experience on all Carrier equipment except centrifugals. Must have intimate knowledge of pneumatic and electric control systems. Acquaintance with oil-burning heater service also desirable. BOX A5265, Air Conditioning & Refrigeration News.

MANUFACTURERS' REPRESENTATIVES: Well-known manufacturer of outstanding line of reach-in refrigerators has openings in key cities and areas in Midwest, South, Southwest such as Cleveland, Detroit, St. Louis, New Orleans and other excellent territories. Good opportunity for the right men. Write BOX A5266, Air Conditioning & Refrigeration News.

WANTED: AIR conditioning engineer for permanent position with Southern Carrier distributor. Write stating age, experience, education, and salary requirements. Replies held strictly confidential. BOX A5267, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WANTED: USED 10-ton and 15-ton air conditioning packaged units preferably with steam coils. Must be in A-1 operating condition. Send full details as to make, price, and availability to: THE GLIDE-AWAY DOOR AND CONSTRUCTION CO., 650 Elizabeth Avenue, Elizabeth, N. J.

EQUIPMENT FOR SALE

AUTOMOTIVE AIR conditioning, complete kits, lowdowns, compressors, condensers, controls. Closing out complete stock below cost. Send for descriptive list and price. KOOLRIDE, INC., 3745 Haverhill Dr., Toledo 12, Ohio.

FOR SALE: 20 h.p. condensing unit; Kelvinator V-block, 4 cylinder; 20 h.p. crocker wheeler 3 phase, 220 V, 60 cycle, 1725 r.p.m. motor, less condenser. Priced for quick sale. LANDON MINK RANCH, Delavan, Wisconsin. Phone: Delavan 989J1.

BRAND NEW motor compressors—Model P91 @ \$29.50, S88 @ \$29.50, S64 @ \$31, S54 @ \$32, S44 @ \$33, S34 @ \$35. All complete with relays. Write for additional information on these and complete refrigeration units. MANN REFRIGERATION SUPPLY CO., 440 Lafayette Street, New York 3, N. Y.

THREE OPEN type 7 1/2 h.p. prominent brand condensers in original crates with motor, less starter, \$625.00 for one, \$1,800.00 for three—less motor, \$495.00 for one, \$1,425.00 for three. RELIABLE MACHINE WORKS, INC., 238 Eagle Street, Brooklyn, N. Y.

ATTENTION DEALERS: Residential air conditioners, completely packaged, available at economy prices, 2 h.p. and 3 h.p. sealed system units shipped ready for installation. No field refrigeration required. 5-year warranty. SPRING CORPORATION, Kensington, Maryland.

REFRIGERATION VALUES: Attention servicemen; send for our catalog of refrigeration parts; savings up to 50%. WALTER W. STARR REFRIGERATION SUPPLIES, 2833 Lincoln Ave., Chicago 13, Illinois.

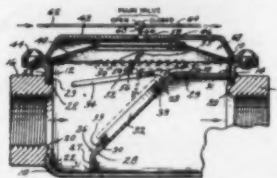
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PATENTS

(Continued from preceding page)

2,704,648. DIAPHRAGM OPERATED PIVOTED VALVE. Clifton A. Cobb, Goshen, Ind., assignor to Penn Controls, Inc., Goshen, Ind., a corporation of Indiana. Application Jan. 31, 1952, Serial No. 269,139. 2 Claims. (Cl. 251-61.)



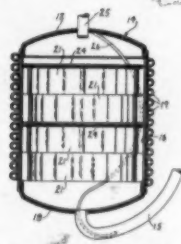
1. In a fabricated valve structure, a body formed of a sheet metal stamping, said body being cup-shaped and being provided with an open top surrounded by an out-turned flange which is an integral part of said sheet metal stamping, opposite ends of said body having openings therethrough, inlet and outlet fittings mounted in said openings and having shoulders against the outer surface of said stamping, said fittings being brazed with respect to said valve body, a partition formed of sheet metal and brazed in position in said valve body, said partition having a slanting wall provided with an opening therethrough, a shouldered valve ring brazed in position in said opening of said slanting wall, a diaphragm and diaphragm cover being secured to said flange to close the open top of said body, a valve gate for seating on said valve ring, a link connection having its ends pivoted to said valve gate and said diaphragm, respectively, and an opening in said diaphragm cover for introducing gas pressure thereto or bleeding gas pressure therefrom.

2,704,649. CONTROL VALVE FOR REVERSIBLE REFRIGERATING SYSTEM. Francis R. Ellenberger, Verona, N. J., assignor to General Electric Co., a corporation of New York. Application Aug. 16, 1951, Serial No. 242,119. 2 Claims. (Cl. 251-137.)



1. A three-way fluid flow control valve having three external fluid flow connections and comprising a casing having three chambers therein including an intermediate chamber having spaced ports providing communication with each of the others of said chambers, said ports being concentric with respect to an axis therethrough, each of said three chambers communicating with a respective one of said connections, means including a valve member for each of said ports movably mounted on a shaft extending along said axis for closing said ports alternatively, said valve members and said shaft being arranged to provide pilot valves centrally of said members about said shaft whereby limited communication may be provided between the two sides of said valve members, solenoid means for moving said shaft axially for selectively actuating said valve members, each valve member being arranged to be retained in its closed position by a difference in pressure between said intermediate chamber and the corresponding one of said other chambers, means for holding each of said valves in its open position on said shaft when the other valve is in its closed position, each of said pilot valves being retained in its closed position by the pressure difference when its corresponding valve is in its closed position and being opened upon actuation of said solenoid means to reduce the pressure difference across its corresponding valve member in its closed position to afford ready release and actuation of the valve member by said solenoid means.

2,704,656. LIQUID COOLING APPARATUS. Clyde P. Freer, Warren, Ohio, assignor to Halsey W. Taylor Co., Warren, Ohio, a corporation of Ohio. Application June 6, 1951, Serial No. 230,229. 1 Claim. (Cl. 257-190.)



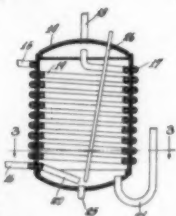
Apparatus for refrigerating water for a drinking fountain, comprising a closed cylindrical water storage tank having a supply pipe for admitting non-refrigerated water to its upper end and a discharge pipe for conducting chilled water from its lower end to said fountain, a coil surrounding said tank in contiguous relation thereto for circulating a fluid refrigerant in close thermal contact with the exterior wall surface of said tank to chill the water admitted thereto, a plurality of substantially circular fin members each comprising an endless vertically corrugated strip disposed in superposed

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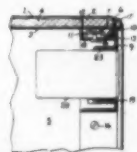
and staggered edge to edge contacting relation within said tank, the outer apices of said corrugations being disposed in thermal contact with the inner cylindrical wall surface of said tank to define therewith a plurality of vertically disposed circumferentially spaced tortuous water passages adjacent the chilled inner tank wall surface, and a plurality of substantially flat vertically spaced baffle plates each of polygonal configuration extending transversely of and within said tank and disposed in horizontal contact with certain of said strips, the spaced apices of said polygonal plates being in substantial contact with said inner cylindrical tank wall surface to define therebetween and between said plate apices a plurality of adjoining water passages of segmental cross-section at the peripheries of said plates, the uppermost of said plates overlying and engaging the upper edge of an upper endless strip and a subjacent plate being interposed between and engaging opposed edges of lower immediately adjoining strips, said baffle plates successively directing the admitted water horizontally outwardly to the peripheral inner tank wall surface and thence downwardly through said vertical tortuous water passages to uniformly chill the tank contents.

2,704,657. APPARATUS FOR COOLING LIQUIDS. Halsey W. Taylor, Warren, Ohio, assignor to The Halsey W. Taylor Co., Warren, Ohio, a corporation of Ohio. Application Oct. 31, 1951, Serial No. 254,005. 1 Claim. (Cl. 257-241.)



A drinking fountain of the refrigerator type, comprising a vertically disposed substantially cylindrical storage tank for holding water to be cooled, a refrigerant pipe helically coiled about the exterior wall surface of said tank in direct contact therewith, a water passage pipe disposed within and helically coiled about the interior wall surface of said tank in direct contact therewith, the convolutions of said helically coiled water passage pipe being in substantial alignment with the adjacent convolutions of said refrigerant pipe and being submerged in the tank contents in direct contact therewith, the upper end of said water passage pipe being directly connected with an exterior source of water to be cooled in said tank, the lower end of said water passage pipe opening into the bottom portion of the tank, means for circulating a fluid refrigerant upwardly through said refrigerant pipe to progressively cool said tank wall and the tank contents, means for circulating water downwardly through said water passage pipe to progressively cool the water prior to its admission into the bottom portion of the tank, and a valve controlled conduit for conducting the cooled water under liquid pressure from said tank bottom portion to said drinking fountain.

2,704,698. REFRIGERATOR CABINET. Le Roy R. Patterson, Jr., Erie, Pa., assignor to General Electric Co., a corporation of New York. Application Nov. 19, 1952, Serial No. 321,368. 11 Claims. (Cl. 312-214.)



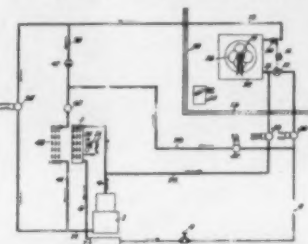
1. A refrigerator cabinet including an outer wall, an inner wall, at least one of said walls including an inwardly extending flange at the front edge thereof, said flange extending inwardly beyond said inner wall, a trim strip including an L-shaped section, one end of said L-shaped section engaging said inner wall, a gasket, said gasket including a portion overlapping said inwardly extending flange, the other end of said L-shaped section having a groove therein, said groove engaging said overlapping portion of said gasket, and means for urging one end of said trim strip against said inner wall and for urging said groove against said portion of said gasket to hold said gasket in position.

Week of March 29

2,704,924. REFRIGERATING SYSTEM PROVIDED WITH COMBINED LOAD BALANCING AND RE-EVAPORATING MEANS. Otto J. Nussbaum and Israel Kramer, Trenton, N. J., said Nussbaum assignor to Kramer Trenton Co., Trenton, N. J.

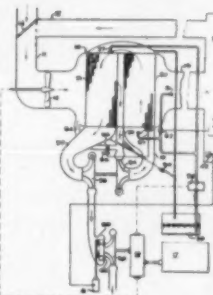
1. A refrigerating system comprising, a compressor, an evaporator, a liquid refrigerant supply line connecting the discharge of the compressor with the inlet of the

evaporator, a refrigerant suction line connecting the outlet of the evaporator with the inlet of the compressor, a con-



duit interconnecting the said supply and suction lines for the flow of liquid refrigerant from the former to the latter during refrigerating cycles to maintain proper pressure balance between the high and low sides of the system, a defrosting conduit for the flow of warm refrigerant connecting the discharge of the compressor with the evaporator, and a combined load balancer and re-evaporator positioned in the said suction line between the said interconnecting conduit and the compressor inlet.

2,704,925. AIR CONDITIONER HAVING AIR EXPANSION MEANS. Homer J. Wood, Sherman Oaks, Calif., assignor to The Garrett Corp., Los Angeles, Calif., a corporation of California. Application Oct. 20, 1952, Serial No. 315,781. 14 Claims. (Cl. 62-6.)



1. An air conditioner, comprising: a heat exchanger having a conditioning air passage selectively connectable on its inlet side with an enclosure and with atmosphere, and on its outlet side with said enclosure, and having a coolant passage; means for moving air through said conditioning air passage; an expansion turbine having an inlet connected to receive conditioning air from said air moving means, and an outlet connected to discharge into said coolant passage; first and second compressors connected to successively receive coolant from said coolant passage, one of said compressors being driven by said turbine; independent power means for driving the other of said compressors and said air moving means; and means for regulating the air flow through the compressor driven by said power means.

2,704,926. ABSORPTION REFRIGERATION SYSTEM HAVING PLURAL TEMPERATURE COOLING STRUCTURE. Wilhelm Georg Kogel, Stockholm, Sweden, assignor to Aktiebolaget Elektrolux, Stockholm, Sweden, a corporation of Sweden. Application Jan. 17, 1951, Serial No. 206,372. Claims priority, application Sweden Jan. 23, 1950. 11 Claims. (Cl. 62-99.)



1. In a refrigerator including a cabinet having a thermally insulated interior and an absorption refrigeration system associated therewith having a circuit for inert gas which includes low and higher temperature evaporator coils in which refrigerant fluid evaporates in the presence of the gas, a horizontally extending member for the cabinet interior comprising spaced apart top and bottom horizontally disposed plates, said low temperature evaporator coil being in thermal relation with said top plate and said higher temperature evaporator coil being in thermal relation with said bottom plate, and means including said bottom plate providing a relatively extensive heat transfer surface to promote cooling of air circulating in the cabinet beneath said horizontally extending member, said housing having openings to enable upstream components of such circulating air to pass into said housing in thermal transfer relation with said top plate.

2,704,927. FREEZING TRAY ARRANGEMENT. John R. Carrell, Richland, Wash., assignor to General Electric Co., a corporation of New York.



1. In a refrigerator cabinet the combination of a freezing compartment disposed within said cabinet and having a horizontally disposed top wall portion, said top wall portion having an upper surface and a lower surface, refrigerant tubing mounted in heat exchange relationship with said upper surface of said top wall portion for cooling said top wall portion, a freezing tray removably supported in a horizontal position within said freezing compartment below and in closely spaced relationship with said lower surface of said top wall portion, and supports formed of material of low heat conductivity for supporting said tray from said top wall portion, said supports being removably mounted on said top wall portion.

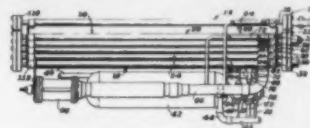
2,704,928. DEVICES USED IN THE PRODUCTION OF ICE IN REFRIGERATORS. Robert Stanley Curry, Bletchley, England. Application March 14, 1952, Serial No. 276,667. 8 Claims. (Cl. 62-108.5.)



1. A device for use in the production of ice in refrigerators, comprising a cup made of resilient material of poor heat

conductivity, a metal insert within said cup at the bottom thereof, a metal base exterior to said cup capable of serving as a support for said cup, said base having a lower surface which is spaced downwardly from the lower surface of the bottom of said cup, and a metal shank passing through the wall of said cup into heat conducting connection with said inert and said base, whereby there is provided between the interior and the exterior of said cup a path of good heat conductivity as compared with the heat conductivity of said resilient material.

2,704,929. REFRIGERANT EVAPORATOR. Carl L. Day and Wilmer D. Rognier, Baltimore, Md., assignors to Crown Cork & Seal Co., Inc., Baltimore, Md., a corporation of New York. Application Nov. 12, 1949, Serial No. 126,732. 1 Claim. (Cl. 62-126.)

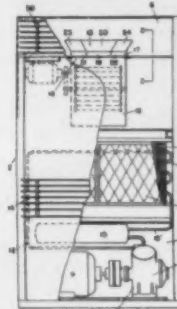


In a refrigeration system, an evaporator assembly including two tubes for liquid to be cooled, and an additional group of tubes for liquid to be cooled, a plurality of refrigerant tubes respectively positioned in heat exchanging relation with said liquid tubes, means to supply said two liquid tubes with different liquid in parallel, means to supply the corresponding refrigerant tubes with refrigerant in parallel, one of said two liquid tubes being connected to all of the liquid tubes of said group of liquid tubes and all of the latter being arranged for parallel flow with respect to each other, and means to supply refrigerant to the refrigerant tubes associated with said group of liquid tubes, said last-mentioned refrigerant tubes being connected in parallel with each other and in parallel with the refrigerant tubes associated with said two first-mentioned liquid tubes.

2,704,971. DIFFUSER ARRANGEMENT FOR SELF-CONTAINED AIR CONDITIONING UNIT. Frank D. Stevens, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Application Jan. 5, 1949, Serial No. 69,364. 5 Claims. (Cl. 62-40.)

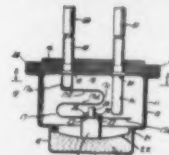
3. In a self-contained air conditioning

unit, the combination of a refrigeration system to cool air for supply to an area being conditioned, a fan to supply treated air to a plenum, said plenum containing an inlet in a wall at a substantially right angle to a wall containing an outlet, and



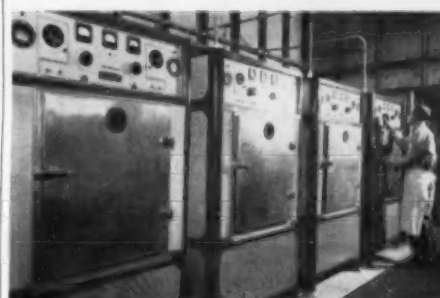
an air diffuser disposed in the plenum surrounding the inlet, said diffuser including a substantially vertically extending wall member about one side of the inlet, substantially vertically extending flanges about the remaining sides of the inlet, and wall members inclined outwardly from said flanges to diffuse entering air throughout the plenum thereby permitting substantially uniform distribution of air through the outlet.

2,705,270. FREEZER ALARM DEVICE. Don E. Moran, Morrison, Ill., assignor to General Electric Co., a corporation of New York. Application Dec. 17, 1952, Serial No. 326,467. 9 Claims. (Cl. 200-140.)

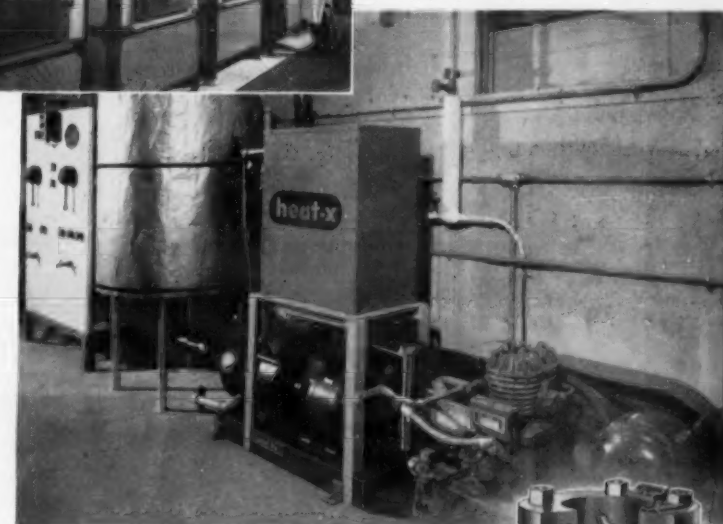


7. In a thermostatic device, a completely enclosed chamber portion having an expansible wall portion, a liquid material which increases in volume upon freezing completely filling said chamber portion, said material comprising potassium chromate and water in approximately the proportions of a eutectic mixture, and a small quantity of silver iodide crystals in said liquid material.

Heat-X Liquid Coolers help Johns-Manville maintain High Quality



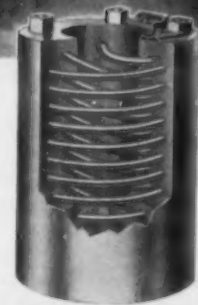
"Weather chambers" at Johns-Manville in which building materials are subjected to "break-down" environmental testing.



Heat-X Liquid Coolers supply chilled water to the "weather chambers" used for testing building materials at the Johns-Manville Research Center . . . another in a long list of applications for versatile, reliable Heat-X refrigeration equipment.

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ASRE Sets Dates for Next Meeting--

(Concluded from Page 1, Col. 5)

ous advantages for the rotary type compressor over the reciprocating machine immediately raised several questions.

This was presented by H. F. Lehmkuhl, manager of compressor development for Seeger Refrigerator Co.

AIR CONDITIONING AND DOMESTIC ENGINEERING

The two conferences on air conditioning and domestic engineering were well attended as usual.

Reports on the Air Conditioned Village at Austin, Texas, while still very much in the preliminary stage, were presented at the air conditioning conference. Highlights are listed in an accompanying article.

Aluminum evaporators were discussed from various points of view in the domestic refrigerator engineering conference.

A wide variety of topics was taken up at the technical sessions. Possibilities of developing a compressor using an injection system instead of expansion valves or capillaries for metering refrigerant flow were cited by Dr. W. M. Carter of the University of Kentucky.

A new look at the old problem of moisture was presented by W. R. Briskin of General Electric Co. in his paper "Moisture Migration in Hermetic Refrigeration Systems."

H. L. Garver of the U. S. Department of Agriculture described various tests being conducted to determine how environment, including air and water temperature, affects such domestic animals as poultry, swine, and cattle.

REFRIGERATED TRANSPORT

Refrigerated transportation problems were discussed in two papers. In one, research and experiments on insulation in truck bodies were outlined by S. W. Eby and R. L. Collister of Armstrong Cork Co.

New designs said to minimize moisture problems in the insulation and structure of low temperature railroad "reefers" were described by T. M. Elfving of Isoflex Corp.

Mathematical solutions to the problem of determining rate of solidification in ice formation as well as casting of molten metal were discussed by David L. Cochran of Stanford university.

Final technical session included three papers:

"New Thermodynamic Properties of 'Freon-12'" by R. C. McHarness, Dr. B. J. Eiseman, Jr., and Prof. J. J. Martin.

"Vibration and Vibration Analysis of Commercial Units" by C. A. Hathaway and K. A. Merz of Torrington Mfg. Co.

REFRIGERANTS

"Some Practical Aspects of the Dielectric Properties of Refrigerants" by E. A. Beacham and R. T. Divers of Carrier Corp.

In addition to the forums on cooling towers and refrigerant designation, there were four others devoted to: distribution of frozen foods, emergency refrigeration during disaster periods, natural convection condensers on self-contained equipment, and corrosion-preventing finishes.

Social events included the annual golf tournament, welcome luncheon, and dinner-dance, plus an open house featuring a Polish folk dance group, and a Beer Festival Monday evening.

Austin Village--

(Concluded from Page 1, Col. 4)

manufacturers, representing 80% of the market, totaled 30,900 units, declared Don V. Petrone, president, Typhoon Air Conditioning Co.

"Let's build better and sell more before we build more," Petrone urged.

Only one of the occupants of Austin Village complained about insufficient cooling (redesign of the house increased the load), but there was a "universal objection to the noise level," revealed I. P. Sharpe of General Electric Co.

Need for reduction of installed cost is also indicated by the Austin Village project, Sharpe said, adding that "control of installed cost is in the hands of the equipment designer."

(Full details of the Air Conditioning Conference will appear in an early issue of the NEWS.)

Worthington Promotes Klaiber

ST. LOUIS—J. A. Klaiber, assistant district manager of Worthington Corp.'s St. Louis office since July, 1948, has been promoted to district supervisor here for the company's Air Conditioning and Refrigeration Div.



H. B. Miller



P. M. Augenstein

G-E Appointments--

(Concluded from Page 1, Col. 2)

tralization policies of the Major Appliance Div., Augenstein and Miller are responsible for the whole business operations of their departments, including the engineering, manufacturing, and marketing of their product lines.

Augenstein joined G-E in 1935 in the then Product Service Div. Later, he became a range service specialist and then a commercial engineer in the Range and Water Heater Dept. He was named sales manager for water heaters in 1948 and three years later was named sales manager for ranges.

Later in 1951 he was appointed manager of marketing for the Dishwasher and Disposall Dept. and then, in 1952, was named manager of sales planning for the division. He was appointed marketing manager of room air conditioners in 1954.

Miller, whose department makes automatic washers, dryers, and combination washer-dryers, has been with General Electric since

1936, when he joined the company as a student engineer in Schenectady, N. Y., after graduating from the University of Arizona in 1934.

He later held a number of jobs in manufacturing, personnel, and wage rate supervisory capacities before being named manager of manufacturing of the Industrial Heating Dept. in Schenectady, in 1952. In 1953 he came to Louisville as manager of manufacturing for the Major Appliance Div., and in May of last year was appointed room air conditioner general manager.

Eberhardt has been with General Electric since 1936. After various financial assignments, in 1946 he was appointed assistant to the comptroller of the then Appliance & Merchandise Dept.

Two years later he was named accountant for the department's sales service sections and in 1953 was made manager of marketing administrative services and finance in the Major Appliance Div. He became sales manager for room air conditioners last year.

Perfection-Hupp Merger--

(Concluded from Page 1, Col. 2)

40% of Perfection's common stock. At present market quotations, the purchase represented an expenditure of \$2,750,000.

Hupp makes air conditioning equipment, and stampings and complete assemblies for the automotive industry and major appliance field.

Perfection makes room air conditioners, a full line of oil and gas space heaters, oil and gas warm air furnaces, gas, oil, and electric cooking appliances, and numerous items for defense.

Perfection has two plants here with a total of 1,500,000 sq. ft. of manufacturing space. Recently, the company purchased a third plant in Waynesboro, Ga., with 100,000 sq. ft. of space.

Donald S. Smith, since 1952 president and chairman of the board of Perfection Industries, Inc., will continue in charge of Perfection's activities, according to the announcement.

Is Transshipping Healthy?--

(Concluded from Page 1, Col. 3)

committee, "there was some reason to believe that bootlegging represented a healthy form of price competition. In any event, I saw no reason to approve joint action by citizens against bootlegging."

Commenting on franchise prac-

tices in the automotive industry, Barnes said exclusive dealer contracts are considered illegal.

And, he declared, manufacturers are not legally entitled "to channel distribution by use of contracts or a course of dealing resulting in unreasonable restraint."



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York Quarterly Earnings Hit \$1.4 Million

YORK, Pa.—Net earnings of York Corp. in the three months ended May 31 rose to \$1.4 million from \$1,240,000 in the corresponding year-ago period as sales declined from \$30 million to \$27 million, it was reported recently by S. E. Lauer, president.

At the same time, Lauer revealed that York has begun construction of a huge new air conditioning system that will serve seven major buildings in Washington, D. C. A single central plant at the nation's Capitol will power the system.

The contract reportedly totals in excess of \$500,000. It covers the machinery in the heart of the cooling system centered in the Capitol power plant.

Four big centrifugal refrigeration units using some 10,000 hp. will provide chilled water to a loop system holding about 600,000 gals. Government engineers term it the largest hydraulic refrigeration system of its kind in the world, according to Lauer.

The system will serve the Capitol, the Supreme Court, two House office and the Senate office units, the Library of Congress, and the Library Annex. The system also will serve a new Senate office building when it is constructed.

The project involves an expansion and replacement of an air

conditioning system dating back to 1937. It is scheduled for completion in about two years.

Lauer also reported that York is equipping a number of Safeway Stores warehouses in the midwest and far west with industrial air conditioning systems for both processing and preservation of food. He said total expenditures for these installations approach \$2 million.

Another project is under way at John Wanamaker's, big Philadelphia department store. Lauer said the store is being equipped with York centrifugal cooling systems using 2,100 hp.

In his financial report, Lauer pointed out that sales and earnings were adversely affected while inventories of packaged air conditioners were being adjusted in the factory and field during the early months of York's fiscal year. The year began Oct. 1, 1954.

However, results of the most recent three months indicate, Lauer said, that "the situation is well in hand now."

The last regular fiscal period for which York reported was the six months ended March 31, 1955. In this period, sales dropped to \$32,256,985 from \$44,449,243 in the like period a year earlier, and earnings totaled \$95,800, compared with \$1,155,015.